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OF

THE BIRD CLUB

OF

PRINCETON UNIVERSITY

Vol. I.

September, 1901.

No. I.

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BULLETIN
OF
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PRINCETON UNIVERSITY.

VOL. I.

SEPTEMBER, 1901.

NO. I.

A LIST OF THE OFFICERS AND MEMBERS OF
THE BIRD CLUB OF PRINCETON UNIVERSITY,
FOR THE UNIVERSITY YEAR 1900-1901.

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THE BIRDS

OF

PRINCETON, NEW JERSEY, AND VICINITY

BY

WILLIAM ARTHUR BABSON, B.S.,

Princeton University

THE BIRDS OF PRINCETON, NEW JERSEY, AND VICINITY.

INTRODUCTORY.

While much work has been accomplished on the bird fauna of this region, and many valuable observations and data have been accumulated, as yet no attempt has been made at their systematic arrangement in a single paper. The following brief treatise is a collection of notes made by myself while a student at Princeton University, during the four years previous to June, 1901; in addition to which the University collections and those of private gentlemen have furnished valuable data. Thanks are due to Dr. Marcus Stultz Farr, Assistant in Geology and Curator of Vertebrate Paleontology, to Dr. Alexander Hamilton Phillips, Assistant Professor of Mineralogy, and especially to Mr. W. E. D. Scott, Curator of Ornithology, all of Princeton University, for numerous suggestions.

Before entering upon any description of the territory under consideration, its boundaries and extent must be clearly defined. By the vicinity of Princeton is meant the circular area described with an eight-mile radius from the town as a center. This will comprise the greater part of Mercer County and the southern portions each of Middlesex and Somerset Counties, including the towns of Princeton, Lawrenceville, Hightstown, Cranbury, Kingston, Plainsboro, Blawenburg and other smaller ones. This does not, however, include any part of the Delaware River, or many more

of the water birds would have been recorded, the fifty species included having all been observed near the small ponds and streams in the neighborhood.

As the different species have been technically described by Mr. Robert Ridgway in his able book¹ on North American Birds, all such descriptions have been omitted; neither has any attempt been made to generalize in regard to breeding habits or geographical distribution, the reader being referred for the former to any of the excellent works on the subject,—Major Bendire's² is among the best; while for distribution, Chapman's³ Hand-Book is sufficient authority. The author has, however, endeavored to make this list as complete as possible, but no species have been included (even some whose occurrence is probable) which have not been *actually observed* in the vicinity. The numbers in parentheses coincide with those of the check-list of the American Ornithologists' Union.

Princeton and vicinity seem to have been particularly adapted by nature for bird study: the very topography of the country, with its many brooks and meadows, woods, ponds and swamps, combined with (except in the case of hawks and game birds) a noticeable lack of indiscriminate shooting, have made this section particularly adapted for the sustenance of a great number of different species as well as an excessive abundance of individuals of the same species. The town is situated in about the center of Mercer County, New Jersey, ten miles from the city of Trenton and

¹ A Manual of North American Birds. By Robert Ridgway.

² Life Histories of North American Birds, with Special Reference to their Breeding Habits and Eggs. By Charles Bendire.

³ Handbook of Birds of Eastern North America. By Frank M. Chapman.

some two hundred and fifty feet above tide water. A mile to the north is Mount Lucas (Mount Rose), a hill, or more properly speaking, a low ridge of trap rock, for the most part heavily wooded with second-growth chestnut, oak and hickory, but interspersed with occasional groves of cedar and dogwood; in some places, however, the original growth remains. This ridge rises in places to a height of some two hundred feet above the town, down to which it gradually slopes, the intervening country being farming lands with occasional small patches of woods. On the southern and eastern sides of Princeton, the slope continues for one mile to Stony Brook and to the Delaware and Raritan canal. From this region the land rises again to the Pennsylvania Railroad, two miles further to the southeast, which runs nearly parallel to the canal. Near the railroad, two small ponds, Grover's and Plainsboro, are drained by the Millstone River, a branch of the Raritan, which, flowing northward, crosses the canal at the Aqueduct, where it meets Stony Brook, which rises in the highlands to the northwest.

The section between Princeton and the railroad comprises farms, except along the water courses, where the low ground forms extensive swamps and marshes, for the most part open but broken by bushes, cat-tails, an occasional black gum or persimmon tree, and in places by heavy timber. Bear Swamp, the largest of these, is three miles long and in parts is almost impenetrable. It is drained by the Duckpond Run which, flowing northward, empties into the canal near Port Mercer.

The remainder of the territory considered is much the same as the preceding in regard to general character,

but a few separate features may also be mentioned. North of Blawenburg is Sorrel Mountain, similar to Mount Lucas, but higher and more extensive, while good-sized ponds and marshes are situated near Cranbury, Lawrenceville and Hightstown, and at Rocky Hill there are very large stone quarries.

The climate is similar to that of New York City, but drier and somewhat milder in winter, the spring commencing fully a week earlier.

Of the two hundred and thirty species herein recorded, many, probably the majority, are rarely seen by the casual observer. Of course, different families and genera have their preferences as regards local habitat and many, found in considerable abundance at the ponds and water courses, would rarely be seen on Sorrel Mountain. It is with reference to the occurrence of these "water birds" that a word may be necessary. On account of its proximity to the coast on one side, and the Delaware on the other, this section is, in case of storms, often visited by species whose appearance is usually not associated with an inland town. Many of these birds are rare and erratic in their occurrence, and are never seen far from the Millstone. While in a popular sense, they could not be called Princeton birds, yet by their very occurrence, they must be recorded in this paper.

Before entering upon a detailed list of the different species, a few generalizations regarding the frequency of appearance and comparative abundance of the different orders may be of interest. Of the first two, Diving Birds (Pygopodes) and Gulls, Terns, etc. (Longipennes), have several representatives, while the Petrels (Tubinares) are entirely absent. The order Geese,

Ducks, etc. (Anseres) is well represented as regards species, but the Ducks, except for two (*Anas obscura* and *Aix sponsa*), are not to be depended upon when number of individuals or frequency of occurrence are considered.

The Herons (Herodiones) and the Rails (Paludicolæ) are well represented, especially the former, both as to number and species, while of that large and widely distributed group, the Shore Birds (Limicolæ), only five or six species can be counted upon each year with any degree of regularity.

Of the remaining orders, popularly termed land birds, only two deserve special mention, the others being in all cases abundant. The Quails, Grouse, etc. (Gallinæ) have shown a marked decrease in numbers, even during the last few years. Ten years ago, Quail (*Colinus virginianus* [*Linn.*]) were abundant; at the present time, however, I doubt very much if a person observing each day in the fall could flush more than four or five coveys during the entire season. It is true that a year ago two hundred birds were liberated by the local Fish and Game Society, but the number of quail this fall (1900) has not been materially increased, and the Ruffed Grouse (*Bonasa umbellus* [*Linn.*]) is so infrequently seen near Princeton as to be called rare.

The Birds of Prey (Raptores) while still represented by the smaller species show an even more rapid decrease in numbers than the preceding. The larger birds of prey, especially of those beneficial genera *Buteo* and *Asio*, have suffered severely at the hands of gunners and farmers. At present the Rough-legged Hawk (*Archibuteo lagopus sancti-johannis* [*Gmel.*]) is a rather rare visitor and the once common Red-tailed Hawk

(*Buteo borealis* [*Gmel.*]) has not been known to breed here for some years.

For the sake of convenience, the birds of the region may be divided into several more or less well-defined classes or groups, arranged according to the seasons in which they may be observed.

I.

PERMANENT RESIDENTS.

This group includes all species which remain throughout the year. It does not follow, however, that all are as abundant at one season as at another, or that the same individuals pass the entire year here, several of the species enumerated below being more or less migratory. This is seen in the case of such birds as the Crows (*Corvus americanus* [*Aud.*]), which are more common during the colder months than in summer. It is very probable that the Bluebirds (*Sialia sialis* [*Linn.*]) found here in the winter are not the same individuals that nested in this locality in the spring, but are arrivals from the north. The Marsh Hawk (*Circus hudsonius* [*Linn.*]) and Cedar Waxwing (*Ampelis cedrorum* [*Vieill.*]) are more abundant during the migrations, the Red-tailed Hawk (*Buteo borealis* [*Gmel.*]) in winter and the Song Sparrow (*Melospiza melodia* [*Wilson*]) and Bluebird (*Sialia sialis* [*Linn.*]) in the warmer months. Such birds as the Ruffed Grouse (*Bonasa umbellus* [*Linn.*]), Blue Jay (*Cyanocitta cristata* [*Linn.*]) and several of the Owls (*Strigidæ* and *Bubonidæ*), however, are Permanent Residents in the strictest sense.

List of Permanent Residents.

Bob-white. *Colinus virginianus* (Linn.).
 Ruffed Grouse. *Bonasa umbellus* (Linn.).
 Ring-necked Pheasant. *Phasianus colchicus* Linn.
 Marsh Hawk. *Circus hudsonius* (Linn.).
 Sharp-shinned Hawk. *Accipiter velox* (Wils.).
 Cooper's Hawk. *Accipiter cooperii* (Bonap.).
 Red-tailed Hawk. *Buteo borealis* (Gmel.).
 Red-shouldered Hawk. *Buteo lineatus* (Gmel.).
 American Sparrow Hawk. *Falco sparverius* Linn.
 American Barn Owl. *Strix pratincta* Bonap.
 American Long-eared Owl. *Asio wilsonianus* (Less.).
 Barred Owl. *Syrnium nebulosum* (Forst.).
 Screech Owl. *Megascops asio* (Linn.).
 Great Horned Owl. *Bubo virginianus* (Gmel.).
 Hairy Woodpecker. *Dryobates villosus* (Linn.).
 Downy Woodpecker. *Dryobates pubescens medianus*
 (Swains.).
 Flicker. *Colaptes auratus luteus* Bangs.
 Blue Jay. *Cyanocitta cristata* (Linn.).
 American Crow. *Corvus americanus* Aud.
 Fish Crow. *Corvus ossifragus* Wils.
 Meadowlark. *Sturnella magna* (Linn.).
 House Sparrow. *Passer domesticus* (Linn.).
 American Goldfinch. *Astragalinus tristis* (Linn.).
 Song Sparrow. *Melospiza melodia* (Wilson).
 Cardinal. *Cardinalis cardinalis* (Linn.).
 Cedar Waxwing. *Ampelis cedrorum* (Vicill.).
 Carolina Wren. *Thryothorus ludovicianus* (Lath.).
 White-breasted Nuthatch. *Sitta carolinensis* Lath.
 Tufted Titmouse. *Parus bicolor* Linn.

Carolina Chickadee. *Parus carolinensis* *Aud.*
Bluebird. *Sialia sialis* (*Linn.*).

The following seven species, although for the most part Summer Residents, are not infrequent during the colder months and may be added to the above list.

Mourning Dove. *Zenaidura macroura* (*Linn.*).
Red-headed Woodpecker. *Melanerpes erythrocephalus* (*Linn.*).
Purple Grackle. *Quiscalus quiscula* (*Linn.*).
Vesper Sparrow. *Poœcetes gramineus* (*Gmel.*).
Field Sparrow. *Spizella pusilla* (*Wils.*).
Swamp Sparrow. *Melospiza georgiana* (*Lath.*).
American Robin. *Merula migratoria* (*Linn.*).

II.

SUMMER RESIDENTS.

This group, as the name implies, includes all birds found in this locality only during the warmer months and breeding. They may, however, arrive early in March and remain until November, as do the Woodcock (*Philohela minor* [*Gmel.*]) and Wood Duck (*Aix sponsa* [*Linn.*]), or they may merely breed and return to the south in August, as do the Rough-winged Swallow (*Stelgidopteryx serripennis* [*Aud.*]) and Worm-eating Warbler (*Helmitherus vermivorus* [*Gmel.*]).

List of Summer Residents.

Wood Duck. *Aix sponsa* (*Linn.*).
American Bittern. *Botaurus lentiginosus* (*Montag.*).
Least Bittern. *Ardetta exilis* (*Gmel.*).
Green Heron. *Ardea virescens* *Linn.*

- King Rail. *Rallus elegans* *Aud.*
 Virginia Rail. *Rallus virginianus* *Linn.*
 Black Rail. *Porzana jamaicensis* (*Gmel.*).
 Woodcock. *Philohela minor* (*Gmel.*).
 Bartramian Sandpiper. *Bartramia longicauda* (*Bechst.*).
 Spotted Sandpiper. *Actitis macularia* (*Linn.*).
 Killdeer. *Ægialitis vocifera* (*Linn.*).
 Mourning Dove. *Zenaidura macroura* (*Linn.*). Occa-
 sional in winter.
 Broad-winged Hawk. *Buteo platypterus* (*Vieill.*).
 Yellow-billed Cuckoo. *Coccyzus americanus* (*Linn.*).
 Black-billed Cuckoo. *Coccyzus erythrophthalmus*
 (*Wils.*).
 Red-headed Woodpecker. *Melanerpes erythrocephalus* (*Linn.*).
 Belted Kingfisher. *Ceryle alcyon* (*Linn.*).
 Whip-poor-will. *Antrostomus vociferus* (*Wils.*).
 Night Hawk. *Chordeiles virginianus* (*Gmel.*).
 Chimney Swift. *Chætura pelagica* (*Linn.*).
 Ruby-throated Hummingbird. *Trochilus colubris* *Linn.*
 Kingbird. *Tyrannus tyrannus* (*Linn.*).
 Great-crested Flycatcher. *Myiarchus crinitus* (*Linn.*).
 Phoebe. *Sayornis phœbe* (*Lath.*).
 Wood Pewee. *Contopus virens* (*Linn.*).
 Acadian Flycatcher. *Empidonax virescens* (*Vieill.*).
 Least Flycatcher. *Empidonax minimus* *Baird.*
 Bobolink. *Dolichonyx oryzivorus* (*Linn.*).
 Cowbird. *Molothrus ater* (*Bodd.*). Occasional in winter.
 Red-winged Blackbird. *Agelaius phœniceus* (*Linn.*).
 Orchard Oriole. *Icterus spurius* (*Linn.*).
 Baltimore Oriole. *Icterus galbula* (*Linn.*).
 Purple Grackle. *Quiscalus quiscula* (*Linn.*). Occa-
 sional in winter.

- Vesper Sparrow. *Poœcetes gramineus* (*Gmel.*). Occasional in winter.
- Yellow-winged Sparrow. *Ammodramus savannarum passerinus* (*Wils.*).
- Henslow's Sparrow. *Ammodramus henslowii* (*Aud.*).
- Chipping Sparrow. *Spizella socialis* (*Wils.*).
- Field Sparrow. *Spizella pusilla* (*Wils.*). Occasional in winter.
- Swamp Sparrow. *Melospiza georgiana* (*Lath.*). Occasional in winter.
- Towhee. *Pipilo erythrophthalmus* (*Linn.*).
- Rose-breasted Grosbeak. *Zamelodia ludoviciana* (*Linn.*).
- Indigo Bunting. *Cyanospiza cyanea* (*Linn.*).
- Scarlet Tanager. *Piranga erythromelas* *Vieill.*
- Purple Martin. *Progne subis* (*Linn.*).
- Barn Swallow. *Hirundo erythrogaster* *Bodd.*
- Bank Swallow. *Clivicola riparia* (*Linn.*).
- Rough-winged Swallow. *Stelgidopteryx serripennis* (*Aud.*).
- Red-eyed Vireo. *Vireo olivaceus* (*Linn.*).
- Warbling Vireo. *Vireo gilvus* (*Vieill.*).
- Yellow-throated Vireo. *Vireo flavifrons* *Vieill.*
- White-eyed Vireo. *Vireo noveboracensis* (*Gmel.*).
- Black and White Warbler. *Mniotilta varia* (*Linn.*).
- Worm-eating Warbler. *Helmitherus vermivorus* (*Gmel.*).
- Blue-winged Warbler. *Helminthophila pinus* (*Linn.*).
- Yellow Warbler. *Dendroica æstiva* (*Gmel.*).
- Prairie Warbler. *Dendroica discolor* (*Vieill.*).
- Oven Bird. *Seiurus aurocapillus* (*Linn.*).
- Louisiana Water-Thrush. *Seiurus motacilla* (*Vieill.*).
- Kentucky Warbler. *Geothlypis formosa* (*Wils.*).
- Maryland Yellow-throat. *Geothlypis trichas* (*Linn.*).

Birds of Princeton.

Yellow-breasted Chat. *Icteria virens* (*Linn.*).
 Redstart. *Setophaga ruticilla* (*Linn.*).
 Mockingbird. *Mimus polyglottos* (*Linn.*).
 Catbird. *Galeoscoptes carolinensis* (*Linn.*).
 Brown Thrasher. *Harporhynchus rufus* (*Linn.*).
 House Wren. *Troglodytes ædon* *Vieill.*
 Long-billed Marsh Wren. *Cistothorus palustris* (*Wils.*).
 Blue-gray Gnatcatcher. *Poliophtila cærulea* (*Linn.*).
 Wood Thrush. *Hylocichla mustelina* (*Gmel.*).
 American Robin. *Merula migratoria* (*Linn.*). Occa-
 sional in winter.

To the above list may be added the following seven species, which, although for the most part migratory, have all been observed during the summer as rare residents, and, with two exceptions, breeding.

Black-crowned Night Heron. *Nycticorax nycticorax*
nævius (*Bodd.*).
 Sora. *Porzana carolina* (*Linn.*).
 Cliff Swallow. *Petrochelidon lunifrons* (*Say*).
 Tree Swallow. *Tachycineta bicolor* (*Vieill.*).
 Northern Parula Warbler. *Compsothlypis americana*
usneæ *Brewster.*
 Chestnut-sided Warbler. *Dendroica pensylvanica*
(Linn.).
 Wilson's Thrush. *Hylocichla fuscescens* (*Steph.*).

III.

SUMMER VISITANTS.

Comparatively few birds are included in this group. They are those whose breeding range is not far from our boundaries and they sometimes visit us in small numbers after the nesting season.

List of Summer Visitants.

- American Egret. *Ardea egretta Gmel.*
Little Blue Heron. *Ardea cærulea Linn.*
Turkey Buzzard. *Cathartes aura (Linn.).* Also a
rare winter visitant.
Bald Eagle. *Haliaëtus leucocephalus (Linn.).* Also a
winter visitant.
Red-bellied Woodpecker. *Melanerpes carolinus (Linn.).*
Summer Tanager. *Piranga rubra (Linn.).*
Loggerhead Shrike. *Lanius ludovicianus Linn.* Also
a winter visitant.

To the above list two more may be added. The Great Blue Heron (*Ardea herodias Linn.*) and American Osprey (*Pandion haliaëtus carolinensis [Gmel.]*), although classed as transients are frequent visitors during the summer after nesting.

IV.

WINTER RESIDENTS.

This group includes all species which arrive from the north in fall and remain for the colder months. In many cases, however, this period covers much more than merely the three winter months, for the Snowbird (*Junco hyemalis [Linn.]*) arrives from the north late in September, remaining until well into April.

List of Winter Residents.

- Rough-legged Hawk. *Archibuteo lagopus sancti-johannis (Gmel.).*
Short-eared Owl. *Asio accipitrinus (Pall.).*

Saw-whet Owl. *Nyctala acadica* (*Gmel.*).
 Horned Lark. *Otocoris alpestris* (*Linn.*).
 American Crossbill. *Loxia curvirostra minor* (*Brehm.*).
 Redpoll. *Acanthis linaria* (*Linn.*).
 Pine Finch. *Spinus pinus* (*Wils.*).
 Tree Sparrow. *Spizella monticola* (*Gmel.*).
 Junco. *Junco hyemalis* (*Linn.*).
 Northern Shrike. *Lanius borealis* *Vieill.*
 Winter Wren. *Anorthura hiemalis* (*Vieill.*).
 Brown Creeper. *Certhia familiaris americanus* (*Bonap.*).
 Red-breasted Nuthatch. *Sitta canadensis* *Linn.*
 Chickadee. *Parus atricapillus* *Linn.*
 Golden-crowned Kinglet. *Regulus satrapa* *Licht.*

To the above list may be added ten species which, although for the most part migratory, occasionally remain for the winter :

Black Duck.¹ *Anas obscura* *Gmel.*
 Wilson's Snipe. *Gallinago delicata* (*Ord.*).
 Pigeon Hawk. *Falco columbarius* *Linn.*
 Yellow-bellied Woodpecker. *Sphyrapicus varius*
 (*Linn.*).
 Rusty Blackbird. *Scolecophagus carolinus* (*Müll.*).
 Purple Finch. *Carpodacus purpureus* (*Gmel.*). Fre-
 quently.
 White-throated Sparrow. *Zonotrichia albicollis* (*Gmel.*).
 Fox Sparrow. *Passerella iliaca* (*Merr.*).
 Yellow-rumped Warbler. *Dendroica coronata* (*Linn.*).
 Hermit Thrush. *Hylocichla aonalaschkæ pallasii* (*Cab.*).

¹ Many of our Ducks would remain as Winter Residents were it not for the fact that there is little open water, our ponds being small and always freezing over.

V.

WINTER VISITANTS.

With a few exceptions, this group includes northern birds which may or may not visit us during the winter and whose occurrence is conditioned more or less by heavy storms, lack of food supply in their northern homes, etc.

List of Winter Visitants.

- Holbøll's Grebe. *Colymbus holbøllii* (*Reinh.*).
Brünnich's Murre. *Uria lomvia* (*Linn.*).
Herring Gull. *Larus argentatus smithsonianus* *Coues.*
Ring-billed Gull. *Larus delawarensis* *Ord.*
Turkey Buzzard. *Cathartes aura* (*Linn.*). Rare, also a summer visitant.
Goshawk. *Accipiter atricapillus* (*Wils.*).
Bald Eagle. *Haliaeetus leucocephalus* (*Linn.*). Also a summer visitant.
Hawk Owl. *Surnia ulula caparoch* (*Müll.*).
Pine Grosbeak. *Pinicola enucleator canadensis* (*Cab.*).
White-winged Crossbill. *Loxia leucoptera* *Gmel.*
Redpoll. *Acanthis linaria* (*Linn.*).
Greater Redpoll. *Acanthis linaria rostrata* (*Coues.*).
Snowflake. *Passerina nivalis* (*Linn.*).
Lapland Longspur. *Calcarius lapponicus* (*Linn.*).
Bohemian Waxwing. *Ampelis garrulus* *Linn.*
Loggerhead Shrike. *Lanius ludovicianus* *Linn.* Also a summer visitant.

VI.

REGULAR TRANSIENT VISITANTS.

This group includes the birds which merely visit us during migrations. Breeding, as a rule, north of us, they pass through Princeton in the fall on their way south, returning in the spring.

List of Regular Transient Visitants.

- Horned Grebe. *Colymbus auritus* Linn.
 Pied-billed Grebe. *Podilymbus podiceps* (Linn.).
 Mallard. *Anas boschas* Linn.
 Black Duck. *Anas obscura* Gmel. Occasional in winter.
 Green-winged Teal. *Nettion carolinensis* (Gmel.).
 Blue-winged Teal. *Querquedula discors* (Linn.).
 American Scaup Duck. *Aythya marila* (Linn.).
 Lesser Scaup Duck. *Aythya affinis* (Eyt.).
 Butterball. *Charitonetta albeola* (Linn.).
 Ruddy Duck. *Erismatura jamaicensis* (Gmel.).
 Canada Goose. *Branta canadensis* (Linn.).
 Brant. *Branta bernicla* (Linn.).
 Great Blue Heron. *Ardea herodias* Linn. Occasional summer visitant after the breeding season.
 Black-crowned Night Heron. *Nycticorax nycticorax nævius* (Bodd.). Rare summer resident.
 Sora. *Porzana carolina* (Linn.). Rare summer resident.
 Yellow Rail. *Porzana noveboracensis* (Gmel.).
 American Coot. *Fulica americana* Gmel.
 Wilson's Snipe. *Gallinago delicata* (Ord). Rare winter resident.

- Least Sandpiper. *Tringa minutilla Vieill.*
Semi-palmated Sandpiper. *Ereunetes pusillus (Linn.)*.
Greater Yellow-legs. *Totanus melanoleucus (Gmel.)*.
Lesser Yellow-legs. *Totanus flavipes (Gmel.)*.
Solitary Sandpiper. *Helodromas solitarius (Wils.)*.
Pigeon Hawk. *Falco columbarius Linn.* Rare winter resident.
American Osprey. *Pandion haliaëtus carolinensis (Gmel.)*. Occasional summer visitant after the breeding season.
Yellow-bellied Woodpecker. *Sphyrapicus varius (Linn.)*. Rare winter resident.
Olive-sided Fly-catcher. *Contopus borealis (Swains.)*.
Yellow-bellied Fly-catcher. *Empidonax flaviventris Baird.*
Alder Flycatcher. *Empidonax traillii alnorum Brewst.*
Rusty Blackbird. *Scolecophagus carolinus (Müll.)*. Occasional in winter.
Purple Finch. *Carpodacus purpureus (Gmel.)*. Frequent in winter.
Savanna Sparrow. *Ammodramus sandwichensis savanna (Wils.)*.
White-crowned Sparrow. *Zonotrichia leucophrys (Forst.)*.
White-throated Sparrow. *Zonotrichia albicollis (Gmel.)*. A few winter over.
Lincoln's Finch. *Melospiza lincolni (Aud.)*.
Fox Sparrow. *Passerella iliaca (Merr.)*. Occasional in winter.
Cliff Swallow. *Petrochelidon lunifrons (Say)*. Occasional summer resident.
White-bellied Swallow. *Tachycineta bicolor (Vieill.)*. Occasional summer resident.

- Blue-headed Vireo. *Vireo solitarius* (*Wils.*).
 Golden-winged Warbler. *Helminthophila chrysoptera*
 (*Linn.*).
 Nashville Warbler. *Helminthophila rubricapilla*
 (*Wils.*).
 Tennessee Warbler. *Helminthophila peregrina* (*Wils.*).
 Northern Parula Warbler. *Compsothlypis americana*
usneæ Brewster. Occasional summer resident.
 Cape May Warbler. *Dendroica tigrina* (*Gmel.*).
 Black-throated Blue Warbler. *Dendroica cærulescens*
 (*Gmel.*).
 Yellow-rumped Warbler. *Dendroica coronata* (*Linn.*).
 Occasional in winter.
 Magnolia Warbler. *Dendroica maculosa* (*Gmel.*).
 Chestnut-sided Warbler. *Dendroica pensylvanica*
 (*Linn.*). Rare summer resident.
 Bay-breasted Warbler. *Dendroica castanea* (*Wils.*).
 Black-poll Warbler. *Dendroica striata* (*Forst.*).
 Blackburnian Warbler. *Dendroica blackburniæ* (*Gmel.*).
 Black-throated Green Warbler. *Dendroica virens*
 (*Gmel.*).
 Pine Warbler. *Dendroica vigorsii* (*Aud.*).
 Yellow Palm Warbler. *Dendroica palmarum hypoch-*
rysea Ridgw.
 Water Thrush. *Seiurus noveboracensis* (*Gmel.*).
 Connecticut Warbler. *Geothlypis agilis* (*Wils.*).
 Hooded Warbler. *Wilsonia mitrata* (*Gmel.*).
 Wilson's Warbler. *Wilsonia pusilla* (*Wils.*).
 Canadian Warbler. *Wilsonia canadensis* (*Linn.*).
 American Pipit. *Anthus pensilvanicus* (*Lath.*).
 Ruby-crowned Kinglet. *Regulus calendula* (*Linn.*).
 Wilson's Thrush. *Hylocichla fuscescens* (*Steph.*). Rare
 summer resident.

- Gray-cheeked Thrush. *Hylocichla aliciae* (*Baird*).
Olive-backed Thrush. *Hylocichla ustulata swainsoni*
(*Cab.*).
Hermit Thrush. *Hylocichla aonalaschkæ pallasii* (*Cab.*).
Occasional in winter.

VII.

IRREGULAR TRANSIENT VISITANTS.

Many of the species in this group are water birds, which, as a rule, follow the large water courses during migrations and are only stragglers within our boundaries. All are rare in this locality.

List of Irregular Transient Visitants.

- Common Tern. *Sterna hirundo* *Linn.*
American Merganser. *Merganser americanus* (*Cass.*).
Hooded Merganser. *Lophodytes cucullatus* (*Linn.*).
Shoveller. *Spatula clypeata* (*Linn.*).
Pintail. *Dafila acuta* (*Linn.*).
Greater Snow Goose. * *Chen hyperborea nivalis* (*Forst.*).
Florida Gallinule. *Gallinula galeata* (*Licht.*).
Northern Phalarope. *Phalaropus lobatus* (*Linn.*).
Pectoral Sandpiper. *Tringa maculata* *Vieill.*
American Golden Plover. *Charadrius dominicus* *Müll.*
Passenger Pigeon. *Ectopistes migratorius* (*Linn.*).
Duck Hawk. *Falco peregrinus anatum* (*Bonap.*).
Philadelphia Vireo. *Vireo philadelphicus* (*Cass.*).
Palm Warbler. *Dendroica palmarum* (*Gmel.*).
Grinnell's Water Thrush. *Seiurus noveboracensis notabilis* (*Ridgw.*).
Mourning Warbler. *Geothlypis philadelphia* (*Wils.*).
Short-billed Marsh Wren. *Cistothorus stellaris* (*Licht.*).

VIII.

ACCIDENTAL VISITANTS.

The homes of the birds in this group are so far removed from our locality that their presence here may be considered as being not only very unusual but merely accidental.

List of Accidental Visitants.

Swallow-tailed Kite. *Elanoides forficatus* (*Linn.*).

Mississippi Kite. *Ictinia mississippiensis* (*Wils.*).

Golden Eagle. *Aquila chrysaetos* (*Linn.*).

Nuchal Woodpecker. *Sphyrapicus varius nuchalis*
Baird.

Hybrid Flicker. *Colaptes auratus luteus* *Bangs* × *colap-*
tes cafer collaris (*Vigors*).

Fork-tailed Flycatcher. *Milvulus tyrannus* (*Linn.*).

Scissor-tailed Flycatcher. *Milvulus forficatus* (*Gmel.*).

Arkansas Kingbird. *Tyrannus verticalis* *Say.*

Painted Bunting. *Cyanospiza ciris* (*Linn.*).

Dickcissel. *Spiza americana* (*Gmel.*).

Prothonotary Warbler. *Protonotaria citrea* (*Bodd.*).

Yellow-throated Warbler. *Dendroica dominica* (*Linn.*).

SUMMARY.

Permanent Residents,	-	-	-	31
Summer Residents,	-	-	-	70
Summer Visitants,	-	-	-	7
Winter Residents,	-	-	-	15
Winter Visitants,	-	-	-	16
Regular Transients,	-	-	-	65
Irregular Transients,	-	-	-	17
Accidental Visitants,	-	-	-	12
				<hr/>
				233
				3*
				<hr/>
Total,	-	-	-	230

* Three species, the Bald Eagle (*Haliaeetus leucocephalus* [*Linn.*]), Turkey Buzzard (*Cathartes aura* [*Linn.*]) and Loggerhead Shrike (*Lanius ludovicianus* *Linn.*) have been recorded as both Winter and Summer Visitants. Hence the deduction.

A LIST OF THE SPECIES FOUND BREEDING
IN THE VICINITY OF PRINCETON,
NEW JERSEY.¹

- Wood Duck. *Aix sponsa* (Linn.). May 6.
*American Bittern. *Botaurus lentiginosus* (Montag.).
Nest and young found June 24, 1899.
Least Bittern. *Ardetta exilis* (Gmel.). May 28.
Green Heron. *Ardea virescens* Linn. May 12.
Black-crowned Night Heron. *Nycticorax nycticorax*
nævius (Bodd.). May 12.
*King Rail. *Rallus elegans* Aud. ?
Young taken July 2, 1899.
Virginia Rail. *Rallus virginianus* Linn. (May 28.)
*Sora. *Porzana carolina* (Linn.). ?
Young taken July 9, 1879.
Woodcock. *Philohela minor* (Gmel.). April 1.
Bartramian Sandpiper. *Bartramia longicauda* (Bechst.).
May 28.
Spotted Sandpiper. *Actitis macularia* (Linn.). May 29.
Killdeer. *Ægialitis vocifera* (Linn.). May 11.
Quail. *Colinus virginianus* (Linn.). May 23.
*Ruffed Grouse. *Bonasa umbellus* (Linn.). (May 14.)
Mourning Dove. *Zenaidura macroura* (Linn.). April 17.
Marsh Hawk. *Circus hudsonius* (Linn.). May 20.
Sharp-shinned Hawk. *Accipiter velox* (Wils.). May 18.
Cooper's Hawk. *Accipiter cooperii* (Bonap.). May 2.

¹NOTE.—These dates do not refer to nests in process of construction, but they are the *earliest* dates on which nests containing eggs have been found. The eggs of species marked with an asterisk have not been actually found, but sufficient indication of breeding has been given by such indisputable facts as old birds feeding young, half-fledged young found in the grass, etc. A parenthesis indicates approximate date where exact data are lacking.

Birds of Princeton.

[Bulletin
Princeton
Bird Club

- Red-tailed Hawk. *Buteo borealis* (*Gmel.*). April 8.
 Red-shouldered Hawk. *Buteo lineatus* (*Gmel.*). April 12.
 Broad-winged Hawk. *Buteo platypterus* (*Vieill.*).
 May 5.
 Sparrow Hawk. *Falco sparverius* *Linn.* April 25.
 American Barn Owl. *Strix pratincola* *Bonap.* April 24.
 American Long-eared Owl. *Asio wilsonianus* (*Less.*).
 April 15.
 Barred Owl. *Syrnium nebulosum* (*Forst.*). March 22.
 Screech Owl. *Megascops asio* (*Linn.*). April 2.
 Great Horned Owl. *Bubo virginianus* (*Gmel.*). Feb. 18.
 Yellow-billed Cuckoo. *Coccyzus americanus* (*Linn.*).
 June 10.
 Belted Kingfisher. *Ceryle alcyon* (*Linn.*). May 10.
 Hairy Woodpecker. *Dryobates villosus* (*Linn.*). May 15.
 Downy Woodpecker. *Dryobates pubescens medianus*
 (*Swains.*). May 10.
 Red-headed Woodpecker. *Melanerpes erythrocephalus*
 (*Linn.*). June 2.
 Flicker. *Colaptes auratus luteus* *Bangs.* May 2.
 Night Hawk. *Chordeiles virginianus* (*Gmel.*). May 18.
 Chimney Swift. *Chætura pelagica* (*Linn.*). May 27.
 Ruby-throated Humming Bird. *Trochilus colubris*
Linn. June 2.
 Kingbird. *Tyrannus tyrannus* (*Linn.*). May 28.
 Great Crested Flycatcher. *Myiarchus crinitus* (*Linn.*).
 May 29.
 Phoebe. *Sayornis phoebe* (*Lath.*). April 25.
 Wood Pewee. *Contopus virens* (*Linn.*). June 9.
 Acadian Flycatcher. *Empidonax virescens* (*Vieill.*).
 Nest only. June 3.
 Least Flycatcher. *Empidonax minimus* *Baird.* Excep-
 tionally early. May 15.

Birds of Princeton.

- Blue Jay. *Cyanocitta cristata* (Linn.). April 26.
Exceptionally early.
- American Crow. *Corvus americanus* Aud. April 4.
- Fish Crow. *Corvus ossifragus* Wils. May 1.
- Bobolink. *Dolichonyx oryzivorus* (Linn.). May 23.
- Cowbird. *Molothrus ater* (Bodd.). In Song Sparrow's (*Melospiza melodia* [Wilson]) nest. May 9.
- Red-winged Blackbird. *Agelaius phœniceus* (Linn.). May 22.
- Meadowlark. *Sturnella magna* (Linn.). May 6.
- Orchard Oriole. *Icterus spurius* (Linn.). May 27.
- Baltimore Oriole. *Icterus galbula* (Linn.). May 26.
- Crow Blackbird. *Quiscalus quiscula* (Linn.). April 24.
- House Sparrow. *Passer domesticus* (Linn.). April 7.
- American Goldfinch. *Astragalinus tristis* (Linn.). June 25.
- Vesper Sparrow. *Poœcetes gramineus* (Gmel.). May 11.
- Yellow-winged Sparrow. *Ammodramus savannarum passerinus* (Wils.). May 23.
- Chipping Sparrow. *Spizella socialis* (Wils.). May 15.
- Field Sparrow. *Spizella pusilla* (Wils.). May 12.
- Song Sparrow. *Melospiza melodia* (Wilson). April 29.
- Towhee. *Pipilo erythrophthalmus* (Linn.). May 15.
- Cardinal. *Cardinalis cardinalis* (Linn.). April 10.
Exceptionally early, generally about May 8.
- Rose-breasted Grosbeak. *Zamelodia ludoviciana* (Linn.). May 17.
- Indigo Bunting. *Cyanospiza cyanea* (Linn.). June 4.
- Scarlet Tanager. *Piranga erythromelas* Vieill. June 1.
- Purple Martin. *Progne subis* (Linn.). May 15.
- Cliff Swallow. *Petrochelidon lunifrons* (Say). May 23.
- Barn Swallow. *Hirundo erythrogaster* Bodd. May 8.

- Tree Swallow. *Tachycineta bicolor* (*Vieill.*). ?
Young found June 5, 1901.
- Bank Swallow. *Clivicola riparia* (*Linn.*). May 22.
- Rough-winged Swallow. *Stelgidopteryx serripennis*
(*Aud.*). (May 30.)
- Cedar Waxwing. *Ampelis cedrorum* (*Vieill.*).
Exceptionally early. June 13.
- Red-eyed Vireo. *Vireo olivaceus* (*Linn.*). May 28.
- Warbling Vireo. *Vireo gilvus* (*Vieill.*). June 3.
- Yellow-throated Vireo. *Vireo flavifrons* *Vieill.*
June 5.
- White-eyed Vireo. *Vireo noveboracensis* (*Gmel.*).
June 2.
- *Blue-winged Warbler. *Helminthophila pinus* (*Linn.*).
See list. May 28.
- Yellow Warbler. *Dendroica æstiva* (*Gmel.*). May 16.
- Oven Bird. *Seiurus aurocapillus* (*Linn.*). May 15.
- Maryland Yellow-throat. *Geothlypis trichas* (*Linn.*).
Exceptionally early. May 20.
- Yellow-breasted Chat. *Icteria virens* (*Linn.*). May 22.
- *Redstart. *Setophaga ruticilla* (*Linn.*). June 9.
- Catbird. *Galeoscoptes carolinensis* (*Linn.*). May 16.
- Brown Thrasher. *Harporhynchus rufus* (*Linn.*).
May 12.
- House Wren. *Troglodytes ædon* *Vieill.* May 20.
- Long-billed Marsh Wren. *Cistothorus palustris*
(*Wils.*). May 28.
- White-breasted Nuthatch. *Sitta carolinensis* *Lath.*
April 28.
- Tufted Titmouse. *Parus bicolor* *Linn.* April 29.
- Carolina Chickadee. *Parus carolinensis* *Aud.* May 20.
- Blue-gray Gnatcatcher. *Poliophtila cærulea* (*Linn.*).
Nest only. June 4, 1879.

Wood Thrush. *Hylocichla mustelina* (*Gmel.*). May 17.
Robin. *Merula migratoria* (*Linn.*). April 25.
Bluebird. *Sialia sialis* (*Linn.*). April 10.

Although we have no direct records of nests being found, the following thirteen species probably breed every year in this locality, as they have all been observed during the breeding season :

Ring-necked Pheasant. *Phasianus colchicus* *Linn.*
Black-billed Cuckoo. *Coccyzus erythrophthalmus*
(*Wils.*).
Whip-poor-will. *Antrostomus vociferus* (*Wils.*).
Henslow's Sparrow. *Ammodramus henslowii* (*Aud.*).
Black and White Warbler. *Mniotilta varia* (*Linn.*).
Worm-eating Warbler. *Helmitherus vermivorus*
(*Gmel.*).
Parula Warbler. *Compsothlypis americana* *usneæ*
Brewster.
Chestnut-sided Warbler. *Dendroica pensylvanica*
(*Linn.*).
Prairie Warbler. *Dendroica discolor* (*Vieill.*).
Louisiana Water Thrush. *Seiurus motacilla* (*Vieill.*).
Mockingbird. *Mimus polyglottos* (*Linn.*). Very
rarely.
Carolina Wren. *Thryothorus ludovicianus* (*Lath.*).
Wilson's Thrush. *Hylocichla fuscescens* (*Steph.*).

ANNOTATED LIST OF BIRDS.¹

Order PYGOPODES. Diving Birds.

Family Podicipidæ. Grebes.

- 1 (2). HOLBÆLL'S GREBE; RED-NECKED GREBE. *Colymbus holbœllii* (*Reinh.*).

A very rare and casual fall and winter visitor. I have never observed this species here, but, during the winter of 1879, Mr. W. E. D. Scott saw a single individual on the canal. This is the only record of the occurrence of Holbœll's Grebe in this locality.

- 2 (3). HORNED GREBE. *Colymbus auritus* *Linn.*

A regular but never common migrant on all the water courses, occurring during the fall until the ponds are frozen over, and again during March and April. Never in summer.

- 3 (6). PIED-BILLED GREBE; HELL-DIVER. *Podilymbus podiceps* (*Linn.*).

Still a common species during migrations, but, owing to indiscriminate gunning, it is fast decreasing in numbers. A dozen of these birds can generally be seen on any of the ponds during the fall and spring months, but, so far as is known, none remain to breed.

Family Alcidae. Auks, Murres, etc.

- 4 (31). BRÜNNICH'S MURRE. *Uria lomvia* (*Linn.*).

There are but two records of the occurrence of this northern species in this locality. On November 25, 1899, Mr. C. F. Silvester found one expiring after having flown against a telegraph wire on Mt. Lucas. This bird is at present in the University Collection, No. 6937.

¹NOTE.—Many of the Water Birds recorded in the following list as not wintering here, would visit us during the colder months were it not for the fact that there is little open water, the ponds being small and always freezing over.

Another was taken at Jackson Wycoff's, Cranbury, December 16, 1897, after a severe storm. It was in an exhausted condition and was easily captured, and was kept alive for some time.

Order LONGIPENNES. Long-winged Swimmers.

Family Laridæ. Gulls and Terns.

- 5 (51a). AMERICAN HERRING GULL. *Larus argentatus smithsonianus Coues.*

One of these birds, an adult male, was shot on the canal on March 17, 1900, and is now in the University Collection, No. 6938. This is the only record of an individual being taken, but I have frequently seen them in winter, flying high in the air from the coast after a severe storm.

- 6 (54). RING-BILLED GULL. *Larus delawarensis Ord.*

An uncommon straggler from the coast during fall and winter. After a heavy storm in November 1899, I saw two of these birds circling over Grover's Pond.

- 7 (70). COMMON TERN. *Sterna hirundo Linn.*

A casual spring and fall visitor from the coast. After a severe storm in October 1898, two of these birds appeared at Cranbury Pond. One of them, a young bird, was shot by Mr. Ross Applegate, and is now in Dr. Farr's possession. While I was fishing at Plainsboro one very foggy day, in the latter part of September 1899, five Common Terns spent the whole morning perched on several dead trees on the shore of the pond. They had probably wandered from the coast, losing their way in the fog, as they appeared to be in an exhausted condition. About two o'clock the weather cleared, and the terns, after circling the pond several times high in the air, flew in a direct line toward the coast.

Order ANSERES. Lamellirostral Swimmers.

Family Anatidæ. Ducks, Geese and Swans.

- 8 (129). MERGANSER ; GOOSANDER ; SHELLDRAKE.
Merganser americanus (Cass.).

A rare visitor in the fall and spring. Prof. Phillips took one May 10, 1881, which is at present in his collection. Another was secured by myself at Grover's Pond, November 18, 1898. These are the only records.

9 (131). HOODED MERGANSER. *Lophodytes cucullatus*
(*Linn.*).

A rare migrant; the only record is March 16, 1881, when a single individual was taken by Prof. Phillips at Grover's Pond.

10 (132). MALLARD. *Anas boschas* *Linn.*

Formerly a tolerably common migrant. At present this species, although occurring regularly each year, is rather rare. During October 1898, I saw two, and in February of the following year a male was secured at Grover's Pond by Mr. Wyckoff. Mr. Scott shot an individual, September 15, 1875, which was mounted, and is at present in the University Collection, No. 797.

11 (133). BLACK DUCK. *Anas obscura* *Gmel.*

This is the most common representative of the order. Arriving from the north sometimes as early as September 10, they remain until the ponds freeze, reappearing again during March and April. So far as is known, none spend the summer in this locality; but were it not for the continuous fusillade made by the spring gunners, it is very probable that several pairs would nest here every year. A few winter in mild seasons.

12 (139). GREEN-WINGED TEAL. *Nettion carolinensis*
(*Gmel.*).

Formerly a not uncommon migrant, now regularly but very infrequently seen each year. During September 1899, I saw two small flocks of Green-winged Teal, and took a single individual the following spring.

13 (140). BLUE-WINGED TEAL. *Querquedula discors*
(*Linn.*).

A rather uncommon migrant, especially in spring, but much more frequently seen than the preceding species. Mr. T. N. Wrenn took an individual on the Millstone, April 20, 1899, which is now in his possession. Another was taken by myself, September 28, 1900. The birds occur here from April 1 to May 10, and from September 1 to October 10.

14 (142). SHOVELER. *Spatula clypeata* (Linn.).

At present the Shoveler is a rare transient visitor. One was secured March 17, 1877, and presented to the Museum by the late W. J. Slidell, Esq. This bird is in the University Collection, No. 789.

15 (143). PINTAIL; SPRIGTAIL. *Dafila acuta* (Linn.).

Prof. Phillips tells me that twenty years ago the Pintail was a not uncommon migrant and that several were taken each year by local gunners. At present, it is rare and I know of no records of its occurrence during the last six years. Mr. Scott's experience coincides with Prof. Phillips'.

16 (144). WOOD DUCK; SUMMER DUCK. *Aix sponsa* (Linn.).

A tolerably common summer resident and common migrant. The number of this species, which was formally abundant, has diminished to four or five pairs which breed in secluded places along the river, notably near Kingston, Bear Brook and on the Upper Millstone. Owing to the disastrous spring shooting, even these are decreasing each year. Last season (1900), to my knowledge, two pairs were shot which had already selected nesting cavities and were preparing to lay. During the migrations, however, Wood Ducks are not uncommon and ten or fifteen are taken each season by local gunners. The birds arrive February 25 and depart November 28.

17 (148). AMERICAN SCAUP; BROADBILL; BLUEBILL.
Aythya marila (Linn.).

A regular and not uncommon visitor during fall and spring on all the ponds, especially after storms from the coast.

18 (149). LESSER SCAUP DUCK; LITTLE BLACKHEAD;
LITTLE BLUEBILL; LITTLE BROADBILL. *Aythya*
affinis (Eyt.).

A common migrant, passing northward rather early in spring and returning during October and November. After a heavy gale during November, 1900, a flock of ten appeared at Grover's Pond, of which six were shot by Mr. Wyckoff.

- 19 (153). BUFFLEHEAD; BUTTER-BALL; SPIRIT DUCK.
Charitonetta albeola (Linn.).

A regular and not uncommon visitor during October, March and April.

- 20 (167). RUDDY DUCK. *Erismatura jamaicensis*
(Gmel.).

A regular and not uncommon migrant on all the ponds, appearing in March and April in spring, and from October 1 to November 20 in fall.

- 21 (169a.). GREATER SNOW GOOSE. *Chen hyperborea nivalis* (Forst.).

A species of rare and casual occurrence so far from the coast. Mr. Scott took one individual from a flock of four, February 3, 1877, which has been mounted and is No. 848 in the University Collection. This is the only record.

- 22 (172). CANADA GOOSE. *Branta canadensis* (Linn.).

Geese are frequently seen flying over during migrations, but few ever alight on any of the ponds. During a severe storm in April 1901, a flock of seventeen found shelter in the marshes near Grover's Pond. One was secured by Mr. Wyckoff.

- 23 (173). BRANT. *Branta bernicla* (Linn.).

"An occasional straggler from the coast during spring and fall."—Scott.

Order HERODIONES. Herons, Ibises, etc.

Family Ardeidæ. Herons and Bitterns.

- 24 (190). AMERICAN BITTERN. *Botaurus lentiginosus*
(Montag.).

A regular and common migrant along the water courses, occasionally remaining for the summer and breeding. Prof. Phillips took a half-fledged bird June 24, 1899, which is at present in his collection. The migration takes place between April 10 and May 5 in spring, and from September 20 to October 20 in fall.

25 (191). LEAST BITTERN. *Ardetta exilis* (Gmel.).

The most abundant representative of the order, but owing to its retiring habits, rather unfrequently seen. The Least Bittern arrives regularly each season about April 25 and soon becomes common, especially at Grover's Pond and at the Millstone, near Gray's Mill.

During the first week in June 1900, I was fortunate enough to find six nests. All were placed in bushes two or three feet above the water and sometimes as far as fifty feet from the shore. Only two were in bushes away from the water. Five eggs seem to be the usual number. In all cases the sitting bird stretching her neck and bill vertically in the air would remain motionless until disturbed and then quietly slipping from the nest would skulk off into the bushes, rarely going more than twenty feet away.

Both old and young depart for the south early in September.

26 (194). GREAT BLUE HERON; BLUE CRANE. *Ardea herodias* Linn.

Common along the water courses, but only during the migrations. Arriving in spring, about March 28, this species is here until the end of April. The fall migration, however, is more extended and lasts from July until the middle of November.

27 (196). AMERICAN EGRET. *Ardea egretta* Gmel.

A very rare and casual visitor from the south. Dr. Farr tells me that during August 1897, five or six of these birds lived on the marshes near Cranbury, departing early in September.

28 (200). LITTLE BLUE HERON. *Ardea cærulea* Linn.

In this locality the Little Blue Heron is a rare and unusual visitor. Otto Dohm, Esq., took a mature male in the white plumage July 21, 1899, near Margerum's Pond, catalogued as No. 6939, University Collection. Several others were seen.

29 (201). LITTLE GREEN HERON; POKE. *Ardea virescens* Linn.

A common summer resident arriving with great regularity the third week in April. By the first of May they retire in single pairs or in small companies to some secluded wood, sometimes as much as half a mile from water, to breed. Five or six pairs nest every year in a thick

grove near Grover's Pond, the eggs being invariably laid by May 18. Another small colony rear their young in a secluded swamp near Kingston. By October 5 all have departed for the South.

30 (202). BLACK-CROWNED NIGHT HERON; QUAWK.
Nycticorax nycticorax nævius (*Bodd.*).

A tolerably common migrant and rare summer resident. Mr. Scott tells me that twenty years ago about thirty pairs bred in a thick wood near Stony Brook every year. At present, however, I know of no such heronies, and but one nest has been found during the last four years. In May 1898, I found a solitary pair breeding on the banks of the Millstone, near Kingston. Although the nest was not disturbed, the birds did not return the following year. The period of the spring migration is brief, extending from April 20 to May 10. In fall, however, birds begin to arrive from the north early in August, and stragglers often remain until late in September.

Order PALUDICOLÆ. Cranes, Rails, etc.

Family Rallidæ. Rails, Gallinules and Coots.

31 (208). KING RAIL. *Rallus elegans* *Aud.*

An uncommon summer resident and migrant. On September 28, 1898, Mr. John French shot an adult at the Duck Pond, and in May of the following year I saw a pair at Grover's Pond. On July 2, 1899, Prof. Phillips saw an adult bird with a brood of newly fledged young at the Duck Pond. This is the only breeding record, but it is very probable that a few pairs nest every year.

32 (212). VIRGINIA RAIL. *Rallus virginianus* *Linn.*

A not uncommon but very local migrant and summer resident, frequenting more especially the marshy meadows of the Upper Millstone. Several nests have been found, all of which contained eggs the third week in May. The birds may be seen in this locality from April 18 to October 1.

33 (214). SORA; CAROLINA RAIL. *Porzana carolina* (*Linn.*).

Much more abundant than the preceding species, but only during migrations. A few, however must occasionally remain for the summer

and breed, for Mr. Scott took a half-fledged bird early in July 1880. The birds are most abundant here from April 1 to May 10, and again from August 20 to October 25.

- 34 (215). YELLOW RAIL. *Porzana noveboracensis* (*Gmel.*).

A rare migrant. This species has been taken once by Prof. Phillips who obtained an individual, at present in his collection, April 10, 1895. I have not been able to secure a specimen, but saw two September 20, 1899. These are the only records. Mr. Scott says that it is a rare migrant and that probably some breed.

- 35 (216). LITTLE BLACK RAIL. *Porzana jamaicensis* (*Gmel.*).

Several years ago Prof. Phillips tried to catch one of these birds which he flushed in a large grass field. This is the only record of its occurrence here.

- 36 (219). FLORIDA GALLINULE. *Gallinula galeata* (*Licht.*).

An uncommon migrant. Some years ago Mr. Scott saw several on Grover's Pond during April.

- 37 (221). AMERICAN COOT; MUD HEN; CROW DUCK; BLUE PETER. *Fulica americana* *Gmel.*

A migrant common at times, especially so during the first cold snap in autumn or after a storm, when a dozen or more will remain for a few days on each of the ponds. They occur in spring from March 20 to May 3, and in fall from September 1 to October 29.

Order LIMICOLÆ. Shore Birds.

Family Phalaropodidæ. Phalaropes.

- 38 (223). NORTHERN PHALAROPE. *Phalaropus lobatus* (*Linn.*).

The only record for the occurrence of this species is May 22, 1896, when Mr. H. Bergen took one on Cranbury bog, after a severe gale from the coast. The skin is, at present, in Dr. Farr's possession.

Family Scolopacidæ. Snipes, Sandpipers, etc.

- 39 (228). AMERICAN WOODCOCK. *Philohela minor*
(*Gmel.*).

A fairly common summer resident and migrant, arriving late in February or early in March, according to the season, and often remaining until December. During the spring and fall Woodcock are more abundant than in the summer, and even the few that do breed, owing to the disastrous July shooting, are rapidly decreasing in numbers. Several nests have come under my observation and in each case incubation had commenced by April 3, the four young remaining in the nest only about two hours after being hatched. During the warmer months the Woodcock affect the low swampy lands near the Millstone and Stony Brook. The fall birds on the other hand seem to prefer the dry slopes on the hills back of Princeton and are uncommon in the Millstone region.

- 40 (230). WILSON'S SNIPE; ENGLISH SNIPE. *Gallinago delicata* (*Ord*).

This species is generally a regular and common migrant in the swamps and wet meadows along the Millstone. During some seasons, however, it appears to be much more numerous than in others and is sometimes scarce. The birds appear during March and April in spring, and from October 1 to December 10 in fall. On January 4, 1900, I took a female, but this is the only winter record.

- 41 (239). PECTORAL SANDPIPER; KRIEKER. *Tringa maculata Vieill.*

Dr. Farr tells me that in August and September small flocks of Kriekers occasionally appear on the mud flats of the ponds near Cranbury. He writes of them: "Abundant at the Cranbury Millpond, August 29, 1895." At Princeton this species has never been recorded.

- 42 (242). LEAST SANDPIPER; PEEP. *Tringa minutilla Vieill.*

A few small flocks pass through each spring during May, returning in August, when, associated with *E. pusillus*, they are more frequently seen. They are, however, never common. (See following species.)

May; July 25 to September 10.

- 43 (246). SEMIPALMATED SANDPIPER; PEEP. *Ereunetes pusillus* (*Linn.*).

A rather irregular migrant occasionally appearing during August on the mud flats of the ponds. Rare in spring. The occurrence of this species, the one preceding and the two following, seems to be in a great measure conditioned by the amount of water in the ponds during August and September. If the season be dry so that large mud banks and flats are exposed, these four species are not uncommon, while if the contrary be the case, they are rarely seen. This sandpiper is uncommon during May and appears also from July 25 to September 10.

- 44 (254). GREATER YELLOW-LEGS. *Totanus melanoleucus* (*Gmel.*).

Occasionally small flocks of these birds, associated with *T. flavipes*, are seen during August and September (see preceding species) but they never become common.

- 45 (255). YELLOW-LEGS; SUMMER YELLOW-LEGS. *Totanus flavipes* (*Gmel.*).

A few appear on the mudbanks of the ponds during the latter part of every summer. (See *Ereunetes pusillus*.) Mr. Scott took five on the banks of Stony Brook August 14, 1875, which are now in the University Collection, Nos. 781, 784, 785, 786, 787.

- 46 (256). SOLITARY SANDPIPER. *Helodromas solitarius* (*Wils.*).

A common migrant from April 28 to May 20. During the fall migration the species is much less frequently seen, but this is probably owing to the more extended duration of that period which lasts through August and September.

- 47 (261). BARTRAMIAN SANDPIPER; UPLAND PLOVER. *Bartramia longicauda* (*Bechst.*).

Prof. Phillips tells me that twenty years ago the Upland Plover was a common summer resident in many of the large grass fields. At present, its occurrence is unusual, but one pair having bred in this vicinity during the last four years (June 31, 1898), and according to the accounts of gunners, but two or three individuals have been taken. The birds may be found from April 15 to September 10.

- 48 (263). SPOTTED SANDPIPER. *Actitis macularia* (Linn.).

A tolerably common summer resident arriving very regularly the third week in April and in a few days becoming abundant along the water courses. The majority, however, pass on to more northern breeding grounds in May and only a comparative few remain to nest in this locality. The eggs are laid late in May. The return migration extends from the middle of August until October, but I have one unusually late record, November 1.

Family Charadriidæ. Plovers.

- 49 (272). AMERICAN GOLDEN PLOVER; GREENBACK. *Charadrius dominicus* Müll.

Dr. Farr tells me that this species is occasionally common during August on the mud flats of Cranbury Bog. At Princeton it has never been taken.

- 50 (273). KILLDEER. *Ægialitis vocifera* (Linn.).

In this locality the Killdeer is a tolerably common summer resident and a common but very irregular migrant. Arriving from the south as a rule early in March, they frequent the tilled fields and pasture lands for two or three weeks. The majority, however, pass on in April to more northern breeding grounds and only a comparative few remain for the summer in this locality. A few pairs nest every year in a corn field near the old golf links, the eggs being invariably laid by May 15. During some seasons the Killdeer are much rarer than in others, but a few *always* occur as summer residents. The birds may be seen here from March 1 to November 10.

Order GALLINÆ. Gallinaceous Birds.

Family Tetraonidæ. Grouse, Bob-whites, etc.

- 51 (289). QUAIL; BOB-WHITE; PARTRIDGE. *Colinus virginianus* (Linn.).

A resident species decreasing in numbers. During the autumn of 1900 I flushed but five coveys of these birds though I hunted almost every day, which is a good index of their scarcity. Last spring (1900)

some two hundred were liberated by the local Fish and Game Commission, and became quite common during the summer, several nests being found the fourth week in May. The great majority, however, must have left the immediate neighborhood after breeding, for in November the number of Quail had not been materially increased.

52 (300). RUFFED GROUSE; PARTRIDGE. *Bonasa umbellus* (Linn.).

In the immediate vicinity of Princeton the Ruffed Grouse is a rare resident very locally distributed. At the Sand Hills, however, it is frequently seen and several nests have been found, the eggs being laid about the middle of May. Mr. Scott once saw a brood of half-grown young in the woods near Princeton.

Family Phasianidæ. Pheasants, etc.

53 (—). RING-NECKED PHEASANT. *Phasianus colchicus* Linn.

A number of these birds which had been kept in captivity were liberated last spring (1900) and have been seen frequently since. Two pairs lived in a briar patch near the old golf links during the winter, and, although no nests have been found, it is very probable that they bred this spring.

Order COLUMBÆ. Pigeons and Doves.

Family Columbidae. Pigeons and Doves.

54 (315). PASSENGER PIGEON; WILD PIGEON. *Ectopistes migratorius* (Linn.).

Twenty-five years ago a good many pigeons were trapped every autumn. At present they are very rare and, so far as I know, none have been taken for at least fifteen years. Prof. Phillips saw a flock of twenty in 1893, and Mr. Scott tells me that a flock of seven were seen passing over this fall (1900), but aside from these there are no recent records of its occurrence at Princeton.

55 (316). MOURNING DOVE; CAROLINA DOVE. *Zenaidura macroura* (Linn.).

An occasional winter and common summer resident, especially along the Millstone. Arriving from the south early in March, the great majority at once retire to the tangled patches along the water courses to breed, although nests are often found within the town. On April 18, 1899, I found four nests, all in hawthorn trees; one contained the unusual number of three eggs. Two broods are generally reared, both old and young collecting in small bands several months before their departure, which takes place during November. A few winter over in mild seasons.

Order RAPTORES. Birds of Prey.

Family Cathartidæ. American Vultures.

56 (325). TURKEY BUZZARD. *Cathartes aura* (Linn.).

A rare winter and common spring, summer and fall visitor. While not nesting in this immediate locality, the proximity of their breeding range enables us to observe this species frequently during May and June, but they are much commoner in March before nesting and again from July until cold weather. On February 6, 1898, I saw two individuals near Grover's Pond, circling high in the air, and Mr. Scott has several winter records. He has also seen large bands of twenty or more individuals in the fall.

57 (327). SWALLOW-TAILED KITE. *Elanoides forficatus* (Linn.).

There are but two records for the occurrence of this rare straggler from the south. Mr. C. F. Silvester of the University, saw one several years ago during the summer, on Mt. Lucas; he was unable to secure it, but is positive as to its identity. Dr. C. C. Abbott writes in his list of Mercer County Birds, "I saw a specimen of this hawk in November 1883."

58 (329). MISSISSIPPI KITE. *Ictinia mississippiensis* (Wils.).

A rare straggler. Dr. C. C. Abbott writes me that he has seen skins of this species taken in this neighborhood, in the collection of George Collins, Taxidermist, of Trenton.

59 (331). MARSH HAWK; HARRIER. *Circus hudsonius*
(*Linn.*).

A common migrant, not infrequent winter and occasional summer resident. An adult male was shot at Clarke's Island January 4, 1898, and it is not unusual to see several in the brown phase of plumage each winter. Prof. Phillips has in his possession a nest and set of eggs taken on Phillips' Meadows. Mr. Scott procured two adult males in full plumage April 22, 1875, now in the University Collection Nos. 538 and 539.

60 (332). SHARP-SHINNED HAWK. *Accipiter velox*
(*Wils.*).

A not uncommon migrant, winter resident, and a rather infrequent summer resident, breeding every year in the heavy woods on Sorrel Mountain. On May 16, 1898, I found a nest high up in a pin oak near Blawenburg. The tree was too difficult to climb, but from the actions of the parent birds I judged that the nest contained young.

61 (333). COOPER'S HAWK. *Accipiter cooperii* (*Bonap.*).

Similar to *A. velox* but breeding more frequently. Mr. Robert H. Southard found a nest near Lawrenceville, May 2, 1896, containing three eggs. Others have been found by local gunners.

62 (334). AMERICAN GOSHAWK. *Accipiter atricapillus* (*Wils.*).

An irregular and rather infrequent winter visitor. During the past four years I have observed this species but twice, and so far as known only two specimens have been taken, one, an immature female, was shot November 20, 1897, on Mount Lucas, and is now in the University Collection, No. 6940; the other, an adult bird, is in the possession of Mr. C. F. Silvester of the Biological Laboratory. Mr. Scott secured two during January 1879. (See Bull. Nutt. Orn. Club, Vol. IV, No. 2, p. 85, April, 1879.)

63 (337). RED-TAILED HAWK. *Buteo borealis* (*Gmel.*).

At present this species is only a tolerably common winter and rare summer resident, and seems to be decreasing in numbers. A nest was found, April 17, 1898, on Sorrel Mountain, where two or three pairs

probably breed every year, but aside from this I know of no direct nesting record since 1875, when Mr. Scott says it was "not an infrequent summer resident and bred here."

64 (339). RED-SHOULDERED HAWK. *Buteo lineatus*
(*Gmel.*).

Still a common resident species, but only so during the colder months. At the approach of spring, the majority leave for more northern breeding grounds and the few that do nest here retire to the most secluded places. I have not been fortunate enough to find a nest, but Mr. Scott obtained one in a high oak April 10, 1878. The three eggs which it contained are now in the University Collection.

65 (343). BROAD-WINGED HAWK. *Buteo platypterus*
(*Vieill.*).

A common summer resident and migrant. Several nests have come under my observation which in all cases were in low oaks, the parent bird sitting close and only flying a short distance when flushed from the nest. The eggs, two or three in number, were deposited as late as May 6. In fall, large flocks of these birds are often seen migrating high in the air. They may be found here from April 1 to November 20.

66 (347a). ROUGH-LEGGED HAWK. *Archibuteo lagopus sancti-johannis* (*Gmel.*).

Judging from the number of specimens in the University Collection, which were all secured in this neighborhood, the Rough-leg must once have been a frequent winter resident. At present it is a rather uncommon and erratic visitor during the colder months, frequenting the low boggy meadows near the Millstone. Both phases of plumage have been taken in this locality. Mr. Farr tells me that it is still not infrequent at the large bogs near Cranbury.

67 (349). GOLDEN EAGLE. *Aquila chrysaëtos* (*Linn.*).

A rare straggler from the west. The only record of its occurrence is March 1881, when an adult male was shot at Rocky Hill. The skin is at present in the possession of Mr. William C. Osborn, Garrison-on-Hudson, New York.

- 68 (352). BALD EAGLE. *Haliaeetus leucocephalus* (Linn.).

Occasionally a straggler appears from the coast, but this species is here an infrequent visitor. A specimen was shot at Cedar Grove, May 6, 1885, which is now in Prof. Phillips' collection, No. 401.

- 69 (356). DUCK HAWK. *Falco peregrinus anatum* (Bonap.).

The Duck Hawk occurs here only as a rare migrant. I have seen it twice during October, but never in spring. Two specimens are in the University Collection, No. 569, an immature female, taken October 5, 1875, and No. 6332, an adult female, taken October 6, 1881.

- 70 (357). PIGEON HAWK. *Falco columbarius* Linn.

A not uncommon migrant, especially in autumn, and rare winter resident, occurring during March and April, and from September until cold weather. I secured a specimen on January 1, 1901.

- 71 (360). AMERICAN SPARROW HAWK. *Falco sparverius* Linn.

A common resident species and the most abundant of all our hawks. By April 1, the birds have selected a suitable cavity, generally a deserted flicker's hole, and by May 1, the five eggs are laid, the same cavity being used for many seasons. For six consecutive years a pair have nested in a pin oak stump on Stony Brook, near the Washington Street Bridge; and last spring (1900) a telegraph pole on the Junction road was cut down, in which a pair had reared their young for several years. The favorite nesting sites in this locality, however, are the large dead trees along the Millstone. During the colder months the Sparrow Hawks frequent the open fields and meadows, especially those in which hay has been stacked.

- 72 (364). AMERICAN OSPREY; FISH HAWK. *Pandion haliaetus carolinensis* (Gmel.).

A not uncommon migrant along the water courses. There are no records of their nesting here, but stragglers begin to arrive from their breeding places early in July and continue until the middle of October. In spring they are seen from March 20 to May 1.

Family Strigidae. Barn Owls.

73 (365). AMERICAN BARN OWL. *Strix pratincola*
Bonap.

Twenty-five years ago Mr. Scott tells me that this species was very rare throughout this section. Since then, however, they have become locally common and breed in several places. In 1898 a nest was found in a hollow tree at the old golf links by Mr. Henry Van Marter and another at the Double Bridges. I was fortunate enough to find one on the top floor of Grey's Mill, May 2, 1898. The old birds entered by means of a grain slide and no nest was made, the seven eggs being deposited on a pile of oat chaff. Since then this pair have been killed, and unfortunately four more were taken soon after. At one place a whole brood of young were destroyed by boys. The pair at the golf links, however, are still unmolested and have successfully reared their last two broods. I have frequently seen them on warm spring evenings flapping silently over the golf course in the search for mice.

Family Bubonidae. Horned Owls, Hoot Owls, etc.

74 (366). AMERICAN LONG-EARED OWL. *Asio wilsonianus* (*Less.*).

A much more common resident than is generally supposed. On May 15, 1898, I found a nest in a tall pine at Prof. Marquand's place, containing two nearly fledged young. During the same spring, two more were found in similar places and the next spring (May 5) Mr. C. R. Babson found another in a cedar tree containing five nearly hatched eggs. A colony of nine of these owls spend every winter in the pines at Mr. Leavitt Howe's place, but early in April retire to more secluded breeding sites, returning again in the early autumn. The ground under the three trees in which they roost is literally covered with mice bones, but out of a hundred or more skulls examined, only one proved to be that of a bird.

75 (367). SHORT-EARED OWL. *Asio accipitrinus* (*Pall.*).

A regular winter visitor, but decreasing in numbers. Formerly a large colony inhabited Phillips' meadows during the colder months, but owing to indiscriminate shooting, only a few remain. There is another

smaller colony in a large grass field near Plainsboro. By April the last stragglers have left for their more northern breeding grounds.

76 (368). BARRED OWL. *Syrnium nebulosum* (*Forst.*).

A rather uncommon resident except in the swampy timberland near Monmouth Junction and at Bear Swamp, where I have frequently seen individuals at dusk. I have never found the Barred Owl breeding, but Mr. Scott secured a nest and three eggs April 3, 1878, and another nest containing one egg partly incubated April 1, 1879. Another nest was taken by Prof. Phillips.

77 (372). SAW-WHET OWL; ACADIAN OWL. *Nyctala acadica* (*Gmel.*).

A rather erratic and very local winter resident. Arriving from the north in December they retire to the shelter of some cedar grove where they remain until early spring. I have met with this species but once and quote the following from Mr. Scott in the Bulletin of the Nuttall Ornithological Club, Vol. IV, No. 2, p. 85, for April, 1879.—“I have never noticed this species here before; it appears to be very common this season.” Mr. Scott collected during that winter about twenty-five individuals, all of which are now in the University Collection. Mr. C. F. Silvester of the University tells me that one was shot on Mt. Rose during February 1901.

78 (373). SCREECH OWL. *Megascops asio* (*Linn.*).

A common resident breeding early in April in nearly all the orchards. The grey phase of plumage seems to predominate throughout this section, but during 1898 seven of the nine owls that came under my observation were in the red plumage.

79 (375). GREAT HORNED OWL. *Bubo virginianus* (*Gmel.*).

At present this species is rather uncommon, but not as infrequent as *Syrnium nebulosum*. One is occasionally seen in the big woods near Cedar Grove, where an adult was recently shot and is now in the University Collection. During the past winter (1901) Mr. D. Miner Rogers saw one near the Millstone, and although but two nests have been found during the last five years, they undoubtedly breed every spring at Cedar Grove and Sorrel Mountain. Mr. C. F. Silvester took a nest early in

March 1901, at Cedar Grove. The three much incubated eggs were deposited in a large cavity high up in a chestnut. They are at present in his possession.

80 (377a). AMERICAN HAWK OWL. *Surnia ulula caparocho* (Müll.).

There are but two records for the occurrence of this very rare winter visitant. According to Dr. C. C. Abbott in his *Birds of New Jersey*, one was secured in Mercer County in 1857, and another in Middlesex County during the winter of 1861.

Order COCCYGES. Cuckoos, Kingfishers, etc.

Family Cuculidæ. Cuckoos, etc.

81 (387). YELLOW-BILLED CUCKOO. *Coccyzus americanus* (Linn.).

A rather common summer resident, breeding more frequently near the Millstone, generally about June 20. The birds arrive May 8 and depart September 25.

82 (388). BLACK-BILLED CUCKOO. *Coccyzus erythrophthalmus* (Wils.).

A not uncommon migrant and infrequent summer resident. Arriving from the south as a rule the first week in May the majority pass northward to breed, but a few probably nest in this locality every year, for on three occasions I have seen pairs on Sorrel Mountain as late as June 12. The period of the fall migration lasts during August and September.

Family Alcedinidæ. Kingfishers.

83 (390). BELTED KINGFISHER. *Ceryle alcyon* (Linn.).

A common summer resident, arriving early in March and remaining often until the streams and ponds are frozen. Several pairs breed every year in the quarries near Kingston and Rocky Hill, and in all the nests which have come under my observation the excavation was commenced by May 5 and the eggs laid about ten days later. The birds arrive March 5 and depart November 20.

Order *PICI*. Woodpeckers, etc.

Family *Picidæ*. Woodpeckers.

- 84 (393). HAIRY WOODPECKER. *Dryobates villosus* (Linn.).

A resident species much commoner than is generally supposed, but only so during the colder months. Last winter (1900) I saw twelve individuals, but few of them breed in this immediate neighborhood as there are but two nesting records. On June 3, 1899, I found young in a cavity high up in a pin oak, situated at the center of a very secluded wood on Stony Brook near the Pump House. The parent birds seemed much disturbed and did not return to breed the following spring. Mr. Scott took a set of four eggs May 17, 1880, which is now in the University Collection.

- 85 (394). DOWNY WOODPECKER. *Dryobates pubescens medianus* (Swains.).

A common resident, especially in the neighborhood of the Millstone. These birds appear to be more abundant during the colder months than in summer, but this is merely due to the fact that during the latter season they are rather retiring and seclusive in their habits, and nests are not as frequently found as the number of birds would indicate. In this locality the eggs are generally laid about the second week in May, a new cavity being excavated each year. Mr. Scott took a nest with five incubated eggs June 2, 1882, which is now in the University Collection.

- 86 (402). YELLOW-BELLIED SAPSUCKER. *Sphyrapicus varius* (Linn.).

A not uncommon migrant and rare winter resident. Dr. Farr tells me that one lived at his place on Van Deventer Street during the greater part of last February, 1901. The great majority, however, pass northward during March and April, returning in October and November.

- 87 (402a). RED-NAPED SAPSUCKER. *Sphyrapicus varius nuchalis* Baird.

A single mounted specimen in the University Collection, No. 521, approaches this form and was taken by Mr. Scott, October 21, 1876.

- 88 (406). RED-HEADED WOODPECKER. *Melanerpes erythrocephalus* (*Linn.*).

A few years ago this species was a common summer and not infrequent winter resident, breeding in several colonies along the Millstone and at the old golf links. At present I know of no such colonies nearer than Griggstown, where a few isolated pairs still nest every year, while at Princeton the Red-headed Woodpecker is so infrequently seen as to be called uncommon. Mr. Scott has found them breeding early in June. A nest taken by him June 7, 1876, containing an incomplete set of two fresh eggs is in the University Collection.

- 89 (409). RED-BELLIED WOODPECKER. *Melanerpes carolinus* (*Linn.*).

Mr. Scott saw a few of these birds in the latter part of the seventies. The exact data have been destroyed and this is the only record of their occurrence in this locality.

- 90 (412a). FLICKER; GOLDEN-WINGED WOODPECKER; HIGHOLDER. *Colaptes auratus luteus* *Bangs*.

An abundant summer and not infrequent winter resident. The majority, however, spend the colder months farther south, returning in March, when they almost immediately mate and select a nesting site, and in this locality the cavity is generally commenced about the third week in April, the birds returning year after year to the same tree. The birds are most common from March 20 to November 20 and a few remain through the winter.

- 91 (—). HYBRID FLICKER. *Colaptes auratus luteus* *Bangs*, × *Colaptes cafer* (*Gmel.*).

Several specimens of this hybrid have been secured in this neighborhood and are now in the University Collection.

Order *MACROCHIRES*. Goatsuckers, Swifts, Hummingbirds, etc.

Family Caprimulgidæ. Nighthawks, Whip-poor-wills, etc.

- 92 (417). WHIP-POOR-WILL. *Antrostomus vociferus* (Wils.).

In the immediate vicinity of Princeton the Whip-poor-will is an uncommon summer resident. It is much more frequent, however, in the wooded hills back of Blawenburg where it undoubtedly breeds every year, but as yet there are no records. The birds arrive about April 18 and leave about October 1.

- 93 (420). NIGHT HAWK; BULL-BAT. *Chordeiles virginianus* (Gmel.).

A not uncommon migrant and rather infrequent summer resident. Professor Phillips found a pair breeding on Mount Lucas May 17. The birds appear about May 4 and leave late in September.

Family Micropodidæ. Swifts.

- 94 (423). CHIMNEY SWIFT. *Chætura pelagica* (Linn.).

An abundant summer resident arriving with regularity the third week in April, departing about the middle of September. The eggs are usually deposited by June 3 and it is very probable that two broods are reared, for young have been found as late as July 22.

Family Trochilidæ. Hummingbirds.

- 95 (428). RUBY-THROATED HUMMING BIRD. *Trochilus colubris* Linn.

A common summer resident remaining from late in April until the middle of September. Several nests which I have seen contained eggs the first week in June.

Order PASSERES. Perching Birds.

Family Tyrannidæ. Flycatchers.

- 96 (442). FORK-TAILED FLYCATCHER. *Milvulus tyrannus* (*Linn.*).

Merely accidental. Dr. C. C. Abbott writes me that an individual was taken in this section last autumn (1900), and is now mounted and in the store at the corner of Broad and Liberty streets, Trenton, New Jersey.

- 97 (443). SCISSOR-TAILED FLYCATCHER. *Milvulus forficatus* (*Gmel.*).

Merely accidental. According to Dr. C. C. Abbott, in his list of Mercer County Birds, a single specimen was secured by him in this section, April 15, 1872, and is now in the collection of the Academy of Science at Salem, Massachusetts.

- 98 (444). KINGBIRD. *Tyrannus tyrannus* (*Linn.*).

An abundant summer resident. The majority arriving about May 1, at once repair to the neighborhood of the Millstone, only a small percentage remaining in the orchards. On June 6, 1898, I found seven nests containing eggs, all in trees overhanging the river. There appeared to be a great difference in the materials used in construction. Some were almost entirely composed of fern and catkin down, while in others, it was entirely lacking. By September 25, the last stragglers have departed for the south.

- 99 (447). ARKANSAS KINGBIRD. *Tyrannus verticalis* *Say.*

A rare straggler from the west. Prof. Phillips took one of this species, September 29, 1894, which is now No. 7 of his collection. This is the only record of its occurrence here.

- 100 (452). GREAT CRESTED FLYCATCHER. *Myiarchus crinitus* (*Linn.*).

A common summer resident. At first frequenting the fields, toward the middle of May these flycatchers take to the orchards, preparatory to breeding. In this locality the eggs are laid early in June, the old

birds returning year after year to the same tree. On two occasions I have noticed pairs waiting for a brood of young bluebirds to become fledged, so that they could use the same cavity for their own eggs. The period of their presence in this vicinity is from May 1 to September 5.

101 (456). PHŒBE. *Sayornis phœbe* (*Lath.*).

This abundant summer resident makes its first appearance, singly or in pairs, often as early as March 14. The nest, situated under a bridge, shed, or in a quarry, is commenced about the third week in April and is generally placed on or near the site of the previous one, but the same nest is never used twice. Several broods are reared, both old and young departing in October.

102 (459). OLIVE-SIDED FLYCATCHER. *Contopus borealis* (*Swains.*).

There is but one record for the occurrence of this species. Mr. Scott saw one in the latter part of the seventies. He was unable to secure it.

103 (461). WOOD PEWEE. *Contopus virens* (*Linn.*).

A common summer resident breeding in woods and orchards. In this locality the eggs are laid about the middle of June. The birds arrive about May 5 and some remain as late as September 25.

104 (463). YELLOW-BELLIED FLYCATCHER. *Empidonax flaviventris* *Baird.*

A tolerably common migrant during May, and from August 1 until the middle of September.

105 (465). ACADIAN FLYCATCHER. *Empidonax virescens* (*Vieill.*).

A rather uncommon summer resident. I have never found the eggs of this species, but on June 5, 1900, I found a newly completed nest, with the birds in possession. A week later it had been abandoned. The birds arrive about May 5 and remain until about September 5.

106 (466a). ALDER FLYCATCHER. *Empidonax traillii alnorum* *Brewst.*

The Alder Flycatcher is a regular and not uncommon migrant, especially in spring. On account of its retiring habits and its similarity

in appearance to its near allies, it often escapes attention when by no means uncommon. It passes through this part of New Jersey during the latter part of May and returns about September 5, remaining some two weeks. I am obliged to Mr. Scott for this data.

107 (467). LEAST FLYCATCHER. *Empidonax minimus*
Baird.

Mr. Witmer Stone, in his 'Birds of Eastern Pennsylvania and New Jersey, calls this species "a rare breeder in this latitude." From my own observations here during the past four years, I should call it a tolerably common summer resident. Five nests have come under my observation, of which two are at present in my collection, so it is by no means rare in the breeding season. Mr. Scott and Prof. Phillips have also found nests. The eggs are generally laid about May 25. The birds arrive about April 25 and leave by September 15.

Family Alaudidæ. Larks.

108 (474). HORNED LARK. *Otocoris alpestris* (*Linn.*).

Dr. Farr tells me that this species is common during the winter months at Cranbury. At Princeton it is a rather irregular fall and winter visitant, though sometimes common, frequenting the bare pastures and old corn fields back of the town, from September 10 until March 25.

Family Corvidæ. Crows, Jays, etc.

109 (477). BLUE JAY. *Cyanocitta cristata* (*Linn.*).

A not uncommon resident, but more frequently seen during the colder months, when they congregate in bands. At the approach of spring, the jays seem to disappear and retire to the most secluded places to breed. The eggs are generally laid about the first week in May in this locality.

110 (488). AMERICAN CROW. *Corvus americanus* *Aud.*

At Princeton the crow is an abundant resident throughout the year, but much more so during the colder months. It is very probable that those breeding here winter further south. During the fall, a great num-

¹NOTE.—The birds of Eastern Pennsylvania and New Jersey. Philadelphia, Delaware Valley Ornithological Club, 1894. P. 101.

ber arrive here from the north, returning in March. The eggs are generally laid early in April, but I have frequently found fresh eggs as late as May 1.

111 (490). FISH CROW. *Corvus ossifragus Wils.*

An uncommon resident, especially in winter. One was taken January 29, 1879, No. 305 University Collection, and another, February 16, 1881, No. 1946 in the University Collection. There are several breeding records. Mr. Scott once found a nest and eggs in the Seminary grounds, May 20, 1880, which is now in the University Collection. Mr. C. R. Babson took a nest May 3, 1901, containing five fresh eggs, at present in his collection.

Family Icteridæ. Blackbirds, Orioles, etc.

112 (494). BOBOLINK; REED-BIRD. *Dolichonyx oryzivorus (Linn.)*.

The males of this common species arrive in small bands about May 1, and in the course of a week are joined by the females. After breeding, beginning about May 25, they again collect in flocks, departing early in October.

113 (495). COWBIRD. *Molothrus ater (Bodd.)*.

A common summer resident, but more so during the migrations. After depositing their eggs, the cowbirds collect in small bands and are seen along the marshes of the Millstone until December. In spring, March 5, is my record for their earliest arrival.

114 (498). RED-WINGED BLACKBIRD. *Agelaius phœniceus (Linn.)*.

Arriving in bands early in March, this species soon becomes very abundant at the Millstone and at all the ponds, where they nest in great numbers, in the cat-tails and bushes. The eggs are generally laid by May 25, and two broods are frequently reared. After breeding, the blackbirds collect in great flocks, preparatory to migration, and by December 1, the last stragglers have departed for the south.

115 (501). MEADOW LARK. *Sturnella magna (Linn.)*.

A common permanent resident. This species winters in large numbers, collecting in flocks after the breeding season they frequent the

more protected meadows, especially those containing long and tangled grass. The eggs are laid about the second week in May.

116 (506). ORCHARD ORIOLE. *Icterus spurius* (Linn.).

Throughout this section the Orchard Oriole is a very common and well distributed summer resident. Arriving from the south early in May they almost immediately pair, but the eggs are rarely laid before the first week in June. I have often heard this species sing while on the wing. Arrives about May 3. Departs about August 25.

117 (507). BALTIMORE ORIOLE. *Icterus galbula* (Linn.).

Not as abundant as *Icterus spurius*, but still this is a very common species, breeding along the Millstone and in many places in the town. The eggs are deposited about June 1. Arrives May 2. Departs about September 1.

118 (509). RUSTY BLACKBIRD. *Scolecophagus carolinus* (Müll.).

A not uncommon, but rather irregular migrant and occasional winter visitor, sometimes occurring in large flocks. On January 1, 1898, I took three from a small band, and early in February of the same year, saw six. The birds may be found here from March 15 to May 1, and from October 1 to December 10, and occasionally in winter.

119 (511). PURPLE GRACKLE, CROW BLACKBIRD. *Quiscalus quiscula* (Linn.).

An abundant summer and occasional winter resident. Arriving about March 8, the blackbirds at once collect in their breeding places, which are the tall pine trees in many of the private places in the town. Here they nest in considerable numbers, and towards the end of May, the young being fledged, all collect in flocks and repair to the fields and swamps, where they remain until cold weather. Occasionally large flocks appear at intervals during the winter months, but, as a rule, the last stragglers have departed for the south by November 20.

Family Fringillidæ. Finches, Sparrows, etc.

120 (515). PINE GROSBEEK. *Pinicola enucleator canadensis* (Cab.).

A rare and irregular winter visitant. Prof. Phillips saw a flock of fifteen of these birds in 1886, and for about ten days in January,

1900, a small band inhabited the pines on Prof. Marquand's place. These are the only records.

121 (517). PURPLE FINCH. *Carpodacus pupureus* (Gmel.).

A regular and not uncommon migrant and winter resident, but rather local in distribution. They can generally be found in fall, however, in the cedar groves on Mount Lucas, and in the spring time favorite resorts are the elm trees back of Brown Hall, where they eat the young shoots and newly opening buds. Spring migration from March 15 to May 10. Fall migration from October 20 to December 10. Occasional throughout the winter.

122 (—). HOUSE SPARROW. *Passer domesticus* (Linn.).

Unfortunately this species is as abundant as ever. During the last six years they have done much toward driving away the Eave Swallow (*P. lunifrons*) and now they have turned their attention to the Rough-winged Swallows (*S. serripennis*) driving out several pairs which bred under Kingston bridge, and using the chinks between the stones for their own nests. They even build under the metal protectors of the arc lights used for lighting the town, and begin laying their eggs frequently as early as April 1. Several broods are reared during the season.

123 (521). AMERICAN CROSSBILL. *Loxia curvirostra minor* (Brehm).

A rather irregular winter resident, never becoming common. During the season of 1899-1900, however, several small bands lived in the clumps of pines scattered throughout the town, remaining until well into spring. Arrives about December 1. Departs about April 1.

124 (522). WHITE-WINGED CROSSBILL. *Loxia leucoptera* Gmel.

A winter visitor of rare and irregular occurrence. The only record of its appearance in this locality was during the season of 1899-1900, when two or three good-sized flocks remained in town until well into March. They were quite tame and familiar, and several were taken, one of which is an adult male, taken January 30, 1900, now in the Uni-

versity Collection, No. 6941. Arrives about December 10. Departs about March 20.

125 (528). REDPOLL. *Acanthis linaria* (*Linn.*).

An irregular winter visitant, not infrequent, however, during some seasons, but in others apparently absent. Many were collected for the University during the winter of 1879, and in 1899 I saw a small band late in November, and another March 1, 1900.

126 (528*b*). GREATER REDPOLL. *Acanthis linaria rostrata* (*Coues*).

A very rare winter visitor. There is but one record of its occurrence. On February 6, 1872, Mr. Scott took three from a small flock. Two are at present in the University Collection, an immature male, No. 1872, and an adult female, No. 1873.

127 (529). AMERICAN GOLDFINCH. *Astragalinus tristis* (*Linn.*).

A permanent resident in considerable numbers, collecting in small flocks during the colder months. The eggs are not laid until about June 28, but two broods are frequently reared in the season, as I have found young as late as August 15.

128 (533). PINE SISKIN. *Spinus pinus* (*Wils.*).

At times a not uncommon fall and winter resident, but rather irregular in occurrence. Arrives October 1, remaining until April 10.

129 (534). SNOWFLAKE; SNOW BUNTING. *Passerina nivalis* (*Linn.*).

An uncommon winter visitant, but occurring at times in considerable numbers. So far as is known, none have been observed here since the season of 1895-1896, when several large flocks appeared at intervals during the winter.

130 (536). LAPLAND LONGSPUR. *Calcarius lapponicus* (*Linn.*).

A rare winter visitor. There is but one record for its occurrence. Prof. Phillips saw two in company with a flock of Snow Bunting, Feb-

ruary 13, 1895. He succeeded in taking one of them, which is now in his collection, catalogued No. 895.

131 (540). VESPER SPARROW; BAY-WINGED BUNTING;
GRASS FINCH. *Poœcetes gramineus* (*Gmel.*).

A common summer and not infrequent winter resident (see Scott in B. N. O. C., Vol. 4, No. 2, p. 82, April 1879). The majority, however, arrive late in March, returning in November. I have found the Vesper Sparrows' nest as early as May 15, and as late as July 20. The young remain in the nest but six days, and it is very probable that even two or three broods are reared.

132 (542a). SAVANNA SPARROW. *Ammodramus sandwichensis savanna* (*Wils.*).

A regular and not uncommon migrant. None remain for the summer. In spring they pass through from April 8 to May 10, and in fall, from September 10 to October 20.

133 (546). GRASSHOPPER SPARROW; YELLOW-WINGED SPARROW. *Ammodramus savannarum passerinus* (*Wils.*).

A common summer resident in all the large grass fields. I have been fortunate enough to find eight nests of this species, of which number, six were roofed over with a side entrance; the other two were open. Five seems to be the usual number of eggs, and two or possibly three broods are reared, the young remaining in the nest but six days. They arrive April 22, and remain until October 23.

134 (547). HENSLOW'S SPARROW. *Ammodramus henslowii* (*Aud.*).

I have never met with this species in the vicinity of Princeton, but Mr. Scott has taken it several times during the summer. One specimen is at present in the University Collection. Another was secured by Prof. Alexander H. Phillips, and although there are no breeding records, Henslow's Sparrow probably breeds every year.

135 (554). WHITE-CROWNED SPARROW. *Zonotrichia leucophrys* (*Forst.*).

A rather infrequently seen migrant, rare in certain seasons. I am inclined to think, however, that these sparrows are more numerous than

is generally supposed. In the fall of 1876 Mr. Scott took over fifty of these birds, the series being a part of the University Collection. On May 6, 1899, I took two of these sparrows and saw three more, and in October of the same year secured a third ; but, as a rule, the White-crowned Sparrow is a rather uncommon migrant in this locality.

136 (558). WHITE-THROATED SPARROW. *Zonotrichia albicollis* (*Gmel.*).

Arriving from the north early in October, these sparrows soon become very abundant in all swamps and damp thickets. The great majority, however, continue southward, and by the first of November only a few remain, which spend the winter in sheltered places where food is abundant. The return migration takes place during April, and by May 15, the last stragglers have departed for the more northern breeding grounds.

137 (559). TREE SPARROW. *Spizella monticola* (*Gmel.*).

A very abundant fall and winter resident in all hedges and thickets. Before leaving in the spring they are in full song. Ordinarily these sparrows prefer the more open fields and hedges, but in severe winters or after a heavy snow fall, when food is scarce, they become very familiar and are abundant throughout the town. Appearing from the north about November 3, they remain until April 10.

138 (560). CHIPPING SPARROW. *Spizella socialis* (*Wils.*).

A very abundant summer resident, undoubtedly breeding several times during the season, as I have found nests as early as May 15, and as late as August 10. In spring, the earliest record for arrival is March 26. The great majority, however, return about two weeks later. By November 3 all have departed for the south.

139 (563). FIELD SPARROW. *Spizella pusilla* (*Wils.*).

An abundant summer, and not infrequent winter resident. The general arrival, however, takes place during the first week in April, and only the winter residents remain after the first week in November. Of the twenty nests which have come under my observation, twelve were placed in low bushes, the others on the ground. Undoubtedly several broods are reared each season, for I have found nests as early as May 12, and as late as July 18. The young remain but six days in the nest.

140 (567). SNOWBIRD; JUNCO. *Junco hyemalis* (Linn.).

This species is, in winter, the most abundant native representative of the family. Arriving from the north, September 28, they remain until well into April, and before departure are in full song. Ordinarily these sparrows prefer the more open fields and hedges, but during severe winters or after a heavy snow fall, when food is scarce, they become very familiar, and are abundant in almost every private place in the town.

141 (581). SONG SPARROW. *Melospiza melodia* (Wilson).

During the summer, this is the most abundant native sparrow, and even during the colder months it is quite common. The great majority, however, arrive about March 10, and depart early in November. They breed several times during the season. Of the forty-three nests which have come under my observation, twenty-eight were on the ground under tussocks of grass, the remainder being placed in bushes. In this locality the eggs are deposited early in May.

142 (583). LINCOLN'S FINCH. *Melospiza lincolnii* (Aud.).

An uncommon migrant. A female was taken here October 7, 1879, by Mr. Scott; another of the same sex, September 21, of the year previous, and a third, female, October 25, 1875 (Nos. 197, 2534, 198, University Collection). Prof. Phillips took an individual May 8, 1894, No. 853 of his collection. These are the only records.

143 (584). SWAMP SPARROW. *Melospiza georgiana* (Lath.).

A common summer resident and migrant; but only in the marshes, about the ponds and the Millstone. They nest during the third week in May. I have occasionally seen the Swamp Sparrow in winter, and twice have taken individuals, January 12, 1898, and February 18, 1899. They are here in numbers from April 1, until December.

144 (585). FOX SPARROW. *Passerella iliaca* (Merr.).

This sparrow occurs here as a common spring and fall migrant, and an occasional winter resident. They may be seen in all swampy hedges and thickets during March, and sometimes as late as May 1, at which time they are in full song. The return migration occurs during the latter half of October and November, but there are several winter records. (See Scott in Bull. Nutt. Orn. Club, Vol. IV, No. 2, p. 82, April, 1879.)

- 145 (587). TOWHEE; CHEWINK. *Pipilo erythrophthalmus* (Linn.).

A common, but very irregularly distributed summer resident. Arriving about the middle of April, the Chewinks seem to collect in the sandy regions east of the Pennsylvania Railroad, where they become common. The eggs are laid about the third week in May. In the immediate vicinity of Princeton they are uncommon. They arrive about April 18, and remain until October 20.

- 146 (593). CARDINAL. *Cardinalis cardinalis* (Linn.).

Through this section the Cardinal is a common permanent resident, more frequently seen during the warmer months, because in winter the great majority seek the protection of the tangled patches along the Millstone. By the first of April a dozen or more pairs have selected nesting sites within the town limits, and by the first week in May the eggs are generally laid. Nests have been found, however, as early as April 8, and as late as June 1. The period of song commences late in February, both sexes participating.

- 147 (595). ROSE-BREADED GROSBEAK. *Zamelodia ludoviciana* (Linn.).

A common summer resident, but very local in distribution, as it is rarely seen except in the neighborhood of the water courses. In 1898 Mr. C. F. Silvester found five nests in one day, and on May 24 of the following year, I found three, each containing eggs. The birds arrive about May 1, and remain until October 1.

- 148 (598). INDIGO BUNTING. *Cyanospiza cyanea* (Linn.).

A common and well distributed species, arriving the first week in May, and leaving for the south early in October. Although generally nesting in low thorny bushes, last year I found two nests in small cedars. Of the seven nests which have come under my observation, each contained three eggs, all of which were laid between June 1 and 12.

- 149 (601). PAINTED BUNTING; NONPAREIL. *Cyanospiza ciris* (Linn.).

An accidental visitor from the south. Prof. Phillips took a single individual, July 6, 1897, which is the only record of its occurrence in this locality, and even this may have been an escaped cage bird.

150 (604). DICKCISSEL; BLACK-THROATED BUNTING.
Spiza americana (Gmel.).

Mr. Scott obtained, through Mr. John F. Cowan, a single individual, an adult male, shot near Princeton, June 4, 1880, No. 2810, University Collection. There are also in the University Collection, two males, both adult, taken by Mr. Scott at Stoutsburg, New Jersey, June 14, 1880, Nos. 249 and 250. These are the only record of the occurrence here in recent years of this once common species.

Family Tanagridæ. Tanagers.

151 (608). SCARLET TANAGER. *Piranga erythromelas Vieill.*

A common migrant and tolerably common summer resident. Arriving, as a rule, early in May, the majority pass northward. Those breeding in this locality seem to prefer the high lands back of Princeton, as it is an unusual thing to find a nest in the neighborhood of the Millstone. Of the six nests which I have seen, each contained eggs by the second week in June. By October 6 the last stragglers have departed for the south.

152 (610). SUMMER TANAGER. *Piranga rubra (Linn.).*

Mr. Scott took a young bird August 5, 1880, which is now in the University Collection, catalogued No. 1607. This is the only record of its occurrence in this locality.

Family Hirundinidæ. Swallows.

153 (611). PURPLE MARTIN. *Progne subis (Linn.).*

Some years ago the Purple Martin was a common summer resident in the vicinity of Princeton, breeding in several colonies, and even under the metal protectors of the arc lights used for lighting the town. At present it occurs only as an irregular and rather uncommon migrant, but Dr. Farr tells me that a colony of about twenty-five spend the summer and breed every year at Cranbury. The birds arrive about April 20, and remain until September 3.

154 (612). CLIFF SWALLOW; EAVE SWALLOW. *Petrochelidon lunifrons (Say).*

Several years ago the Eave Swallow was a common summer resident, nesting in many places. As late as 1896, two pairs still bred at

Gray's Mill, but since that time the species has occurred only as a migrant during May, in spring and in fall, from August 10 until September 10.

155 (613). BARN SWALLOW. *Hirundo erythrogaster* (Bodd.).

A common summer resident, but much less so than formerly. At Princeton the eggs are laid during the second week in May, and two broods are reared. The birds arrive about April 10 and remain until September 25.

156 (614). TREE SWALLOW; WHITE-BELLIED SWALLOW. *Tachycineta bicolor* (Vieill.).

A common migrant and rare summer resident. Arriving from the south before any of the other swallows, March 20, as a rule this species passes on to more northern breeding grounds. Occasionally, however, a few pairs remain to breed, for on June 16, 1900, Prof. Phillips found three pairs nesting in a dead tree on the Millstone. The young were probably hatched as the old birds were carrying food. This same tree was again used in 1901. The return migration takes place during August, September and October, but rarely in the immense numbers which one sees on the coast.

157 (616). BANK SWALLOW. *Clivicola riparia* (Linn.).

A not uncommon migrant and infrequent summer resident. A few pairs still breed every year in mud banks near Kingston, the eggs being laid as a rule by June 1, but aside from these I know of no colonies that remain for the summer. The birds arrive about April 18, and remain until September 25.

158 (617). ROUGH-WINGED SWALLOW. *Stelgidopteryx serripennis* (Aud.).

Two or three pairs of these birds spend the summer near every mill or stone bridge on the Millstone. After arriving, which takes place the third week in April, they at once choose a suitable nesting site, generally a chink between the stones of a bridge or quarry, but often on a beam under a mill, or occasionally in a deserted Kingfisher's hole, and *always* near water. The nest is frequently started as early as May 1,

and is sometimes very bulky, according to its situation, but the eggs are rarely laid before the first of June. They leave late in August.

Family Ampelidæ. Waxwings.

159 (618). BOHEMIAN WAXWING. *Ampelis garrulus* Linn.

Dr. C. C. Abbott, in his List of Mercer County Birds, says he saw two specimens that were shot in this section a number of years ago. This is the only record for the occurrence of this rare winter visitor from the north.

160 (619). CEDAR-BIRD; CEDAR WAXWING. *Ampelis cedrorum* (Vieill.).

A rather irregular permanent resident, commoner during spring and in fall. At all seasons, except while breeding, the Cedar-birds rove about the country in flocks, sometimes several months elapsing between their visits. Last October, while watching a flock feeding on juniper berries, I noticed that many took insect food, catching it on the wing. Nests containing eggs have frequently been found on the University Campus late in June, and in two instances as early as June 12.

Family Laniidæ. Shrikes.

161 (621). NORTHERN SHRIKE; BUTCHER BIRD. *Lanius borealis* Vieill.

A regular and tolerably common winter visitant, varying in numbers in different seasons. During the season of 1900-1901, the unusual number of ten shrikes came under my personal observation.

162 (622). LOGGERHEAD SHRIKE. *Lanius ludovicianus* Linn.

A rather uncommon and irregular visitor. Occurring at all times of the year, except during the breeding season, it is more common in spring and fall. See Scott Bull. Nutt. Orn. Club, Vol. 4, No. 2, p. 82, April, 1879.

Family Vireonidæ. Vireos.

163 (624). RED-EYED VIREO. *Vireo olivaceus* (Linn.).

The most abundant representative of the family, breeding in all woods and on the campus. Of the seventeen nests which I have seen

the majority contained fresh eggs the second week in June. They arrive about April 28, and remain until October 15.

164 (626). PHILADELPHIA VIREO. *Vireo philadelphicus* (Cass.).

A rare migrant. There are but two records. Mr. Scott took a male September 21, 1876, and another September 26, of the same year. Both are now in the University Collection, catalogued as Nos. 144 and 145.

165 (627). WARBLING VIREO. *Vireo gilvus* (Vieill.).

A tolerably common summer resident, breeding in this locality about the second week in June. The birds arrive about May 1, and remain until September 15.

166 (628). YELLOW-THROATED VIREO. *Vireo flavifrons* Vieill.

A rather uncommon summer resident, breeding about the second week in June. They arrive about May 1, remaining until September 5.

167 (629). SOLITARY VIREO. *Vireo solitarius* (Wils.).

A not uncommon migrant from April 13 until May 12, and in fall during September and part of October.

168 (631). WHITE-EYED VIREO. *Vireo noveboracensis* (Gmel.).

A common summer resident and migrant. After the arrival, which occurs late in April, these vireos become abundant for about ten days, especially at the Millstone. The great majority, however, pass northward in May, and, as a summer resident, this species is not nearly as common as *V. olivaceus*. Two nests which I have seen contained nearly fresh eggs on June 12. Arrival, April 30. Departure, October 5.

Family Mniotiltidæ. Wood Warblers.

169 (636). BLACK AND WHITE WARBLER; BLACK AND WHITE CREEPER. *Mniotilta varia* (Linn.).

A common migrant and rather infrequent summer resident. Arrives from the south about the third week in April, the great majority

pass northward to breed. A few pairs, however, probably nest in this locality every year for I have seen individuals as late as June 10 on Mount Lucas, and on one occasion saw a pair carrying materials for building. Arrives April 18. Departs October 5.

170 (637). PROTHONOTARY WARBLER. *Protonotaria citrea* (Bodd.).

A rare straggler from the south, recorded but once in this neighborhood. On May 8, 1894, Prof. Phillips secured a specimen, which is at present in his collection, No. 401.

171 (639). WORM-EATING WARBLER. *Helmitherus vermivorus* (Gmel.).

A very local and rather infrequently seen summer resident, probably breeding in the ravines and dry wooded slopes of the neighboring hills, where it is not uncommon. On May 10, 1898, I took a male, and another on May 5, 1901. Arrives about May 1. Departs about August 25.

172 (641). BLUE-WINGED WARBLER. *Helminthophila pinus* (Linn.).

A common migrant and not infrequent summer resident. Although there is no direct record of nests being found, this species undoubtedly breeds in some numbers on Mount Lucas and Sorrel Mountain, where it frequents the scrubby second-growth woods and clearings. On several occasions I have found broods of newly-fledged young as early as June 10. Arrives about April 29, remaining until September 10.

173 (642). GOLDEN-WINGED WARBLER. *Helminthophila chrysoptera* (Linn.).

A rather uncommon migrant during May and August, in habits and choice of haunts closely resembling *H. pinus*. The birds appear from May 1 to 20, and again late in August, remaining until about September 5.

174 (645). NASHVILLE WARBLER. *Helminthophila rubricapilla* (Wils.).

A tolerably common migrant, frequenting the open and second growth woods, the Nashville Warbler may be found from May 5 to 20, and again from August 25 to October 1.

- 175 (647). TENNESSEE WARBLER. *Helminthophila peregrina* (Wils.).

A rather uncommon migrant, preferring the open woodlands and young woods to fields and orchards. This warbler appears from May 15 to 25, and later from August 25 to October 1.

- 176 (648). NORTHERN PARULA WARBLER. *Compsothlypis americana usneæ Brewster*.

During May and September, the Parula is common in all the swamps and orchards, and is occasionally seen during the summer. Owing to a scarcity of usnea or Spanish moss in this locality, I am inclined to think that few remain to breed, although I have seen them as late as June 4. Arrives April 25. Departs October 10.

- 177 (650). CAPE MAY WARBLER. *Dendroica tigrina* (Gmel.).

I have never observed this warbler in spring. Mr. Scott, however, has collected a few in fall, but he calls them "rather rare." In spring the birds arrive about May 10, remaining a week. They return about August 25, staying until October 1.

- 178 (652). YELLOW WARBLER. *Dendroica æstiva* (Gmel.).

A very abundant summer resident and migrant, especially in the swamps of the Millstone. Arriving with great regularity the last week in April, they almost immediately begin preparations for breeding and the nest is frequently commenced by May 12. On May 30, 1898, I found five nests along the Millstone, three of which contained Cowbird's (*Molothrus ater*) eggs. By September 25 the last stragglers have returned to the south.

- 179 (654). BLACK-THROATED BLUE WARBLER. *Dendroica cærulescens* (Gmel.).

A common migrant appearing from April 20 to May 25, and again from August 28 to October 8.

- 180 (655). YELLOW-RUMPED WARBLER; MYRTLE WARBLER. *Dendroica coronata* (Linn.).

This species is the first of the warblers to arrive from the south and is common during April, and sometimes as late as May 20, return-

ing during September, October and part of November. Frequently, however, one is seen during the winter months. (See W. E. D. Scott in Bull. Nutt. Orn. Club, Vol. IV, No. 2, p. 81, April, 1879.) The Myrtle Warbler seems to prefer roadsides and hedges to thick woods or swampy regions.

181 (657). MAGNOLIA WARBLER. *Dendroica maculosa* (Gmel.).

A migrant frequently seen during May and again in fall, from August 15, to October 8.

182 (659). CHESTNUT-SIDED WARBLER. *Dendroica pensylvanica* (Linn.).

A common migrant and probably a rare summer resident. I once saw a pair, June 12, in a briar patch on Mount Lucas, where they may have bred, but there are no direct records. The birds are here in the spring from May 1 to 30, and in the fall from August 12 to September 16.

183 (660). BAY-BREASTED WARBLER. *Dendroica castanea* (Wils.).

Generally this species is a rather rare migrant, especially in spring. During some seasons, however, it becomes unusually common, as was the case in 1875, especially in the early fall when many were collected for the University. I took three individuals in September 1898. The birds are here from May 10 to May 22, and again from August 20 to October 1.

184 (661). BLACK-POLL WARBLER. *Dendroica striata* (Forst.).

An abundant migrant, passing northward late in May and early in June, and returning in great numbers during the latter part of September, when they are abundant everywhere, particularly in the elm trees on the University Campus.

185 (662). BLACKBURNIAN WARBLER. *Dendroica blackburniæ* (Gmel.).

A tolerably common migrant from May 8 to May 22, and again from August 20 to October 6.

- 186 (663). YELLOW-THROATED WARBLER. *Dendroica dominica* (Linn.).

A very rare straggler from the south. Mr. Witmer Stone¹ mentions one taken by Dr. C. C. Abbott in this section, May 28, 1860. This is the only record of its occurrence here.

- 187 (667). BLACK-THROATED GREEN WARBLER. *Dendroica virens* (Gmel.).

A regular and not uncommon migrant, passing northward in May, returning during September and the first half of October. So far as is known, none have ever bred in Princeton.

- 188 (671). PINE WARBLER. *Dendroica vigorsii* (Aud.).

A casual spring and fall visitor, but more frequently seen during the latter season. Owing to the lack of pine woods in this locality this species does not summer here. The birds may be found here from April 8 to May 3 in spring, and from September 20 to November, in the fall.

- 189 (672). PALM WARBLER; RED-POLL WARBLER. *Dendroica palmarum* (Gmel.).

The Red-poll Warbler is here a rare migrant. Mr. Scott secured one specimen in October 1877, No. 69, University Collection. This is the only record.

- 190 (672a). YELLOW PALM WARBLER; YELLOW RED-POLL. *Dendroica palmarum hypochrysea* Ridgw.

A common migrant during April and October, frequenting the fields, hedges and roadsides, some remaining until well into November.

- 191 (673). PRAIRIE WARBLER. *Dendroica discolor* (Vieill.).

A common migrant and an infrequent and very local summer resident undoubtedly breeding in places. This species is rarely seen in the woods, but frequents bushy fields, clearings and thickets, from April 28 to September 15.

¹NOTE.—The Birds of Eastern Pennsylvania and New Jersey. Philadelphia, Delaware Valley Ornithological Club (1894), p. 136.

- 192 (674). OVEN-BIRD; GOLDEN-CROWNED THRUSH.
Seiurus aurocapillus (*Linn.*).

A very common summer resident, especially in the thick woods on Mount Lucas, where it breeds abundantly. Several nests have come under my observation, and the five eggs were invariably laid by May 24. These birds are to be found from about April 27 to October 10.

- 193 (675). WATER THRUSH. *Seiurus noveboracensis* (*Gmel.*).

A tolerably common migrant in the neighborhood of the Millstone, but frequently found at some distance from water. On May 15, 1901, I saw ten of these birds at Stony Brook, near the Acqueduct. They are frequent from May 1 to 20, and from August 10 to October 3.

- 194 (675a). GRINNELL'S WATER THRUSH. *Seiurus noveboracensis notabilis* (*Ridgw.*).

A very rare and casual visitor during the migrations. Only one record for its occurrence in this locality exists. Mr. Scott took one specimen, a male, September 10, 1879, near Princeton, which is in the University Collection, No. 1556.

- 195 (676). LOUISIANA WATER-THRUSH. *Seiurus motacilla* (*Vieill.*).

A rather uncommon summer resident. There are no nesting records, but it undoubtedly breeds, for on June 12, 1900, I took a newly fledged young bird. The birds may be found from April 15 to September 1.

- 196 (677). KENTUCKY WARBLER. *Geothlypis formosa* (*Wils.*).

Although no specimens of this warbler have been observed here for many years, it probably occurs in places every season. Dr. C. C. Abbott of Trenton writes me "When I was much in Princeton, 1864-67, I found this species frequenting the woods along Stony Brook."

- 197 (678). CONNECTICUT WARBLER. *Geothlypis agilis* (*Wils.*).

There are no records of the occurrence of this species in spring. During the latter part of August and through September, however, it

is not uncommon, frequenting the low swampy lands near ponds and marshes.

198 (679). MOURNING WARBLER. *Geothlypis philadelphia* (Wils.).

A very rare migrant. The only record for its occurrence in this locality is for September 22, 1880, when Mr. Scott secured a female which is at present in the University Collection, No. 6942.

199 (681). MARYLAND YELLOWTHROAT. *Geothlypis trichas* (Linn.).

This is one of the most abundant warblers, breeding in damp thickets and along the edges of every bog or marsh in the neighborhood. As many as sixteen nests have come under my observation and, although the majority were in tussocks of grass in the immediate proximity of water, yet quite a number have been found in dry thickets and briar patches suspended several inches above the ground. The eggs are generally laid early in June, but I have frequently found nests in May, and on one occasion a set of eggs was taken May 19. The birds may be found here from April 24 to October 21.

200 (683). YELLOW-BREASTED CHAT. *Icteria virens* (Linn.).

The Chat is here a common summer resident, breeding in many of the briar patches on Mount Lucas and in the swamps of the Millstone. In this locality the eggs are laid generally the fourth week in May. The birds arrive about May 1, and remain until September 1.

201 (684). HOODED WARBLER. *Wilsonia mitrata* (Gmel.).

A species of casual occurrence. Several years ago Prof. Phillips saw a small flock during May. On May 5, 1900, Mr. C. R. Babson saw one which he was unable to secure. Mr. Scott secured a specimen May 2, 1881, No. 2209, University Collection.

202 (685). WILSON'S WARBLER. *Wilsonia pusilla* (Wils.).

A regular and not uncommon migrant, frequenting the lower woodland growths, where it catches its insect food much after the manner of

the flycatchers, from about May 8 to 25, and again from August 20 to September 10.

203 (686). CANADIAN WARBLER. *Wilsonia canadensis* (Linn.).

A common migrant, especially in the low wet woods along the Millstone and Stony Brook, from May 6 to 30, and later from August 15 to September 25.

204 (687). AMERICAN REDSTART. *Setophaga ruticilla* (Linn.).

A very common migrant and not infrequent summer resident. I have never found the nest of this species, but on two occasions I have seen pairs carrying the materials for building. Prof. Phillips, however, has been more successful having found two nests June 6, 1901, one of which contained three eggs. The birds may be found from April 28 until October 10.

Family Motacillidæ. Wagtails and Pipits.

205 (697). AMERICAN PIPIT; TITLARK. *Anthus pensilvanicus* (Lath.).

Flocks of these birds appear on open fields and pastures at intervals during the three spring months and again during October and November.

Family Troglodytidæ. Thrashers, Wrens, etc.

206 (703). MOCKINGBIRD. *Mimus polyglottos* (Linn.).

A very rare summer resident. Prof. Phillips has taken a single individual. It was a young bird, probably reared in the neighborhood.

207 (704.) CATBIRD. *Galeoscoptes carolinensis* (Linn.).

A very abundant summer resident, arriving with great regularity the third week in April, and remaining until October 22. A large majority of the nests found have contained fresh eggs the third week in May.

- 208 (705). BROWN THRASHER. *Harporthynchus rufus* (Linn.).

The Thrasher is here an abundant summer resident, especially in the neighborhood of the Millstone. Of the twelve nests that have come under my observation, all were in briar patches, none being placed on the ground, as is habitual in some localities. Four appears to be the number of eggs, which are generally laid about the third week in May. The birds may be found here from April 18 to October 25.

- 209 (718). CAROLINA WREN. *Thryothorus ludovicianus* (Lath.).

A rare summer resident. Mr. Scott tells me he has observed this species several times, but had been unable to secure a specimen until September 25, 1897, when he took a single male, which is now in the University Collection, No. 6943. Although the Carolina Wren undoubtedly breeds in the neighborhood, so far there has been no record of a nest.

- 210 (721). HOUSE WREN. *Troglodytes aëdon* Vieill.

This familiar species is still a common summer resident in all the orchards, arriving with great regularity each year the last week in April and remaining until October 5.

- 211 (722). WINTER WREN. *Anorthura hiemalis* (Vieill.).

A not uncommon migrant, but owing to its retiring habits, rather infrequently seen. In sheltered places, however, a few spend the winter. The birds begin to arrive from the north about October 1, most of them winter south of this point and return from March 10 to April 20.

- 212 (724). SHORT-BILLED MARSH WREN. *Cistothorus stellaris* (Licht.).

A rare migrant. But three specimens have been taken. An adult male, No. 6944, is now in the University Collection and was secured by Mr. Scott September 25, 1897. I took another October 9, 1898. The data in regard to the third specimen which I know of from Princeton is unfortunately not available.

213 (725). LONG-BILLED MARSH WREN. *Cistothorus palustris* (*Wils.*).

A rather uncommon and very local summer resident and migrant. I have never found this species breeding in the immediate neighborhood of Princeton, but Prof. Phillips tells me that a few nest at the Duck Pond every year. In the marshes of the Delaware near Trenton I have found this wren to be a common summer resident. Four nests which I have seen contained fresh eggs the second week in June. The birds arrive about May 7 and remain until October 15.

Family Certhiidae. Creepers.

214 (726). BROWN CREEPER. *Certhia familiaris americanus* (*Bonap.*).

A much more common migrant and winter resident than is generally supposed. During the season of 1899-1900 I noticed this species more than thirty times. It may be found from September 28 until April 20, and is especially abundant during the migrations.

Family Paridae. Nuthatches and Titmice.

215 (727). WHITE-BREASTED NUTHATCH. *Sitta carolinensis* *Lath.*

A not uncommon resident, but much more frequently seen during the colder months when they rove around in small bands. About April 1 these nuthatches seem to disappear, and during the breeding season are quite rare, only a few nests having been found. Mr. Benjamin Gray found one early in May 1900. I am inclined to think that many of the fall and winter birds are visitors from the north.

216 (728). RED-BELLIED NUTHATCH. *Sitta canadensis* *Linn.*

A winter visitor very erratic in occurrence. At intervals of some years this species appears in considerable numbers from the north, and at other seasons is either very rare or entirely absent. During the winter of 1899-1900, which was especially mild, these nuthatches were abundant, travelling through the town in bands of twenty or thirty and remaining in some instances as late as May 13. On that date two pairs

which had excavated cavities and appeared to be preparing to breed, were driven off by the English Sparrows. Mr. Scott observed the first arrivals, two birds on September 7, 1899, and after that date the birds soon became abundant.

217 (731). TUFTED TITMOUSE. *Parus bicolor Linn.*

A common resident species throughout the year, especially so during fall and winter, when they travel in bands and feed on the pin oak acorns. These birds are so seclusive and retiring during the breeding season that but few nests have been found. Mr. Robert H. Southard found one early in May 1897, and Mr. C. R. Babson found a pair breeding in a large pin oak May 16, 1901.

218 (735). CHICKADEE. *Parus atricapillus Linn.*

A regular and not uncommon winter resident. None remain during the summer.

219 (736). CAROLINA CHICKADEE. *Parus carolinensis Aud.*

A not uncommon resident, very retiring during the breeding season. The only nesting record is May 29, 1901, when Mr. Edward W. Scudder found a nest containing six fresh eggs.

Family Sylviidæ. Kinglets and Gnatcatchers.

220 (748). GOLDEN-CROWNED KINGLET. *Regulus satrapa Licht.*

A common winter resident. The Golden-crowned Kinglet arrives from the north the first week in October and at once becomes abundant in all cedar groves and clumps of pines. By April 25 the last stragglers have left here for their northern breeding grounds.

221 (749). RUBY-CROWNED KINGLET. *Regulus calendula (Linn.).*

Found in all evergreens, this species is a very common migrant, passing through on its southward migration during the latter part of September and October and returning during April and May, when the males are in full song.

- 222 (751). BLUE-GRAY GNATCATCHER. *Poliophtila cærulea* (*Linn.*).

A rare summer resident, probably breeding. I have never met with this species, but Mr. Scott took one April 28, 1875, No. 65, University Collection. He has also taken this species in the late summer and early fall months.

Family Turdidæ. Thrushes, Bluebirds, etc.

- 223 (755). WOOD THRUSH. *Hylocichla mustelina* (*Gmel.*).

While not as generally abundant as in some localities, at Princeton the Wood Thrush is a common summer resident, especially in private places throughout the town and in the wooded upland. A majority of the nests which I have seen, have been found with eggs the fourth week in May. From April 28 until October 6 these birds are common. They sing until about the last week in July.

- 224 (756). WILSON'S THRUSH; VEERY. *Hylocichla fuscescens* (*Steph.*).

In the immediate vicinity of Princeton the Veery occurs chiefly as a migrant. I am inclined to think that a few pairs may breed on the hills back of Blawenburg, for on two occasions I have seen pairs as late as June 10. The birds are common from April 25 to May 25; they are rarely seen in summer. They are again conspicuous from August 25 to September 10.

- 225 (757). GRAY-CHEEKED THRUSH; ALICE'S THRUSH. *Hylocichla alicia* (*Baird*).

A tolerably common migrant, from May 12 to June 1, and from September 15 to October 10.

- 226 (757a). BICKNELL'S THRUSH. *Hylocichla alicia* *bicknelli* *Ridgw.*

This thrush is here an uncommon migrant during May, and from September 10 to October 5.

- 227 (758*a*). OLIVE-BACKED THRUSH. *Hylocichla ustulata swainsoni* (Cab.).

This species is a common transient migrant from May 10 to June 10 in spring, passing south in the fall from September 10 to October 5.

- 228 (759*b*). HERMIT THRUSH. *Hylocichla aonalaschkæ pallasii* (Cab.).

A common migrant appearing often as early as March 1, and by the end of April the last stragglers have passed northward. The fall migration takes place during October and part of November, but frequently one is seen during the winter. (See Scott. Bull. Nutt. Orn. Club, Vol. IV, No. 2, p. 82, April 1879.)

- 229 (761). AMERICAN ROBIN. *Merula migratoria* (Linn.).

A very abundant summer resident, and a few winter in secluded places. I am inclined to think that this species is not only becoming more numerous, but is also becoming more familiar. During the spring of 1898, I found sixty-three nests, one of which was in a barn, the remainder in trees.

In 1900, one hundred and seventy nests came under my observation, of which number forty-one were situated in woods, swamps or orchards and one hundred in suitable situations on private places in the town. Of the remaining twenty-nine, eight were placed under bridges, two being under the iron girders of the Pennsylvania Railroad bridge over the Millstone, four were in quarries and sixteen were in barns, sheds, under piazzas, etc. One was found under a board walk, and Mr. D. Miner Rogers found one containing two eggs on the ground at the foot of a bush. Several broods are reared during the summer. The birds are abundant from March 10 to November 20, and a few regularly remain throughout the winter.

- 230 (766). BLUEBIRD. *Sialia sialis* (Linn.).

A common summer and not uncommon winter resident. The majority, however, arrive March 1 to 10, and at once mate and select nesting sites. The eggs are generally laid early in April, and two broods are frequently reared. After breeding, the bluebirds collect in small flocks preparatory to their departure which takes place in November.

ADDENDUM.

231 (274) Semipalmated Plover†: Ring-neck: *Ægialitis semipalmata* Bonap.

Throughout this section the Ring-neck occurs as an uncommon migrant. I have never observed it, but Prof. A. H. Phillips has been fortunate enough to secure two specimens. One was taken by him May 23, 1882, and is at present in his collection (No. 174). The other (No. 197) was secured August 29 of the same year. These are the only records.

† NOTE:—In the text this species should occur on page 44, immediately following *Ægialitis vocifera* (Linn).

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